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ENVIRONMENTAL POLLUTION: SANITARY ENGINEERING AND INDUSTRIAL WA--ETC(U)  
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1 OF 5  
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A041 950





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1 OF 5

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A041950



AD No

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(51)

**AD-A041 950**

**DDC/BIB-77/09**

**ENVIRONMENTAL POLLUTION:  
SANITARY ENGINEERING AND  
INDUSTRIAL WASTE  
A DDC BIBLIOGRAPHY**

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Alexandria, Va. 22314**

**JULY 1977**

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) *Bibliographies                      Environmental Management *Wastes (Sanitary Engineering)    Pollution Abatement *Wastes (Industrial)                Radioactive Waste Sanitary Engineering               Waste Disposal Disposal                                Waste Treatment                      (See Reverse)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This bibliography contains citations of unclassified and unlimited reports dealing with sanitary and industrial wastes, pollution of oceans, rivers, and estuaries by the disposal of garbage, sewage, and wastes. Various methods of reclamation and treatment of waste are presented from life support and closed ecological systems which may prove beneficial to ongoing research and operations for controlling environmental pollution. Corporate Author-Monitoring Agency, Subject, Title and Personal Author are provided.		

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SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

*Item 19 KEY WORDS (Cont'd)*

Life Support  
Closed Ecological Systems  
Public Health  
Toxicity  
Cleaning  
Water Supplies  
Munitions Industry  
Ships  
Water Pollution  
Air Pollution  
Reclamation

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## FOREWORD

This bibliography consists of 313 unclassified and unlimited citations of reports on *Environmental Pollution: Sanitary Engineering and Industrial Waste*.

These citations are studies and analyses dealing with sanitary and industrial wastes. Included are references to reports on pollution of oceans, rivers, and estuaries by the disposal of garbage, sewage and wastes. Various methods of reclamation and treatment of waste are presented from life support and closed ecological systems which may prove beneficial to ongoing research and operations of controlling environmental pollution.

References were taken from entries processed into the Defense Documentation Center's AD data bank during the period of January 1963 through March 1977.

This bibliography supersedes DDC report bibliographies on *Environmental Pollution: Sanitary Engineering and Industrial Waste*, AD-737 500, DDC-TAS 71-57-1, dated February 1972 and AD-771 715, DDC-TAS 73-75, dated December 1973.

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DDC	Buff Section <input type="checkbox"/>
UNANNOUNCED	<input type="checkbox"/>
JUSTIFICATION	
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**BY ORDER OF THE DIRECTOR, DEFENSE LOGISTICS AGENCY**

**OFFICIAL**

*Hubert E. Sauter*

**HUBERT E. SAUTER**  
Administrator  
Defense Documentation Center

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 296 173

RUTGERS - THE STATE UNIV NEW BRUNSWICK N J

EVALUATION AND DEVELOPMENT OF A RATIONAL THEORY FOR  
THE DESIGN OF SEWAGE STABILIZATION PONDS (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT., 1 JUL-31 AUG  
62,

JAN 63 47P LAWLER, JOHN P. ; SCHLIMMEYER  
WILBERT H. ; GRANSTROM, MARVIN L. ;  
CONTRACT: DA 49-193-MD-2317

UNCLASSIFIED REPORT

DESCRIPTORS: \*SANITARY ENGINEERING, \*SEWAGE, ANALYSIS,  
DAMS, DATA, DESIGN, PROCESSING (U)  
IDENTIFIERS: STABILIZATION PONDS (M)

EVALUATION AND DEVELOPMENT OF A THEORY FOR THE DESIGN OF  
SEWAGE STABILIZATION PONDS.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 402 395

STRATEGIC AIR COMMAND OFFUTT AFB NEBR

USAF SANITARY AND INDUSTRIAL HYGIENE ENGINEERING  
SYMPOSIUM PROCEEDINGS, SPONSORED BY STRATEGIC AIR  
COMMAND, CONVENED AT 392D AEROSPACE MEDICAL GROUP,  
VANDENBERG AIR FORCE BASE, CALIFORNIA - 9-12 OCTOBER,  
1962 (U)

62 IV

UNCLASSIFIED REPORT

DESCRIPTORS: \*INDUSTRIAL MEDICINE, COSTS, DOSIMETERS,  
HAZARDS, HEALTH PHYSICS, MICROWAVES, NUCLEAR  
ENGINEERING, NUCLEAR POWER PLANTS, PROPELLANTS,  
RADIATION DOSAGE, SAFETY, SANITARY ENGINEERING,  
SYMPOSIA, TOXICITY (U)

SANITARY AND INDUSTRIAL HYGIENE ENGINEERING  
SYMPOSIUM, OCTOBER 1962, VANDERBERG AFB.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 402 502

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

PREVENTION OF AIR POLLUTION BY FERROUS METAL  
LURGICAL ENTERPRISES,

(U)

MAR 63 13P KALYUZHNI, D.N. i  
REPT. NO. 7934.

UNCLASSIFIED REPORT

NOTICE: ALSO FROM UTS FOR 8.50 AS REPT. 63-  
21263.

SUPPLEMENTARY NOTE: TRANS. OF MONO. SANITARNAYA  
OKHRANA ATMOSFERNOGO VOZDUKHA OT VYBRUSOV  
PREDPRIYATII CHERNOI METAL LURGII (SANITARY  
PROTECTION AGAINST AIR POLLUTION BY WASTE  
PRODUCTS FROM FERROUS METALLURGICAL ENTERPRISES)  
KIEV, 1961, PP. 166-171 AND 182-183.

DESCRIPTORS: \*AIR POLLUTION, \*SANITARY, IRON INDUSTRY,  
STEEL INDUSTRY, METALLURGY, WASTE GASES, INDUSTRIES,  
CLASSIFICATION.

(U)

CONTENTS: APPENDIX I: MODEL PROGRAM FOR  
THE INSPECTION OF INDUSTRIAL ENTERPRISES TO REVEAL  
AND ELIMINATE SOURCES OF AIR POLLUTION APPENDIX  
II: SANITARY CLASSIFICATION OF INDUSTRIES AND  
PROTECTIVE ZONES

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 403 714

CORNELL UNIV ITHACA N Y SCHOOL OF HOTEL  
ADMINISTRATION

FOOD SERVICE PROCEDURES IN FALLOUT SHELTERS.

(U)

APR 63 204P

CONTRACT: UCD-QS-63-49

UNCLASSIFIED REPORT

DESCRIPTORS: \*FOOD DISPENSING, \*RADIOACTIVE, FOOD,  
TRAINING, PERSONNEL MANAGEMENT, NUTRITION, CONTROL,  
PREPARATION, SANITARY, WASTE (SANITARY ENGINEERING),  
WATER, DISPOSAL, ODORS, TEMPERATURE, LIGHT, STORAGE,  
CIVIL DEFENCE SYSTEMS, HUMIDITY, ENERGY,  
INSTRUMENTATION, HEATING, ENERGY, CONTAINERS, MANAGEMENT  
ENGINEER, SHELTERS. (U)

CONTENTS: ORGANIZATION AND MANAGEMENT OF FOOD  
SERVICES THE NATURE OF THE PROBLEM POLICIES  
OF THE FOOD MANAGER ORGANIZATION OF THE FOOD  
SERVICES ORIENTATION AND TRAINING OTHER  
PERSONNEL MANAGEMENT PROBLEMS FOODS AND FEEDING  
CHARACTERISTICS OF WATER AND FOOD SUPPLIES MENU  
PLANNING AND STOCKING SELECTION AND DESIGN OF  
EQUIPMENT SELECTION OF ENERGY SOURCES ISSUING  
AND INVENTORIES PREPARATION, SERVICE,  
DISTRIBUTION AND CONTROL SANITATION AND WASTE  
DISPOSAL ENVIRONMENTAL FACTORS TEMPERATURE AND  
HUMIDITY ODORS AND ODOR CONTROL LIGHTING  
REQUIREMENTS, SOURCES AND SCHEMES SPACE  
ARRANGEMENT, ASSIGNMENT AND PREDICTION (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 408 967

DUNLAP AND ASSOCIATES INC DARIEN CONN

TESTING CIVIL DEFENSE PLANS AND OPERATIONS AT THE  
FEDERAL, STATE AND LOCAL LEVELS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

MAY 63 121P

CONTRACT: OCD OS62 60

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CIVIL DEFENSE, TESTS), (\*FALLOUT,  
RADIATION MONITORS), RADIOACTIVE CONTAMINATION,  
RADIATION MEASURE, DAMAGE, ANALYSIS, TEST METHODS,  
SHELTERS, RADIATION DOSAGE, ERRORS, NUCLEAR, NUCLEAR  
EXPLOSIONS, FOOD, WATER SUP, SANITARY ENGINEERING,  
VENTILATION, COMMUNICATION SYSTEMS.

(U)

THE FINAL REPORT FOR CONTRACT NO. OCD-OS-62-  
60 IS ORGANIZED INTO THREE CHAPTERS. CHAPTER I  
IS DEVOTED TO A BRIEF DISCUSSION OF THE OVER-ALL  
PROBLEM STUDIED DURING THIS CONTRACT. CHAPTER II-  
PRESENTS DESCRIPTIONS OF THE THREE TESTS DEVELOPED  
DURING THE STUDY, I.E., A MUSTERING PLAN TEST, A  
DAMAGE ASSESSMENT TEST, AND A RADIATION ANALYSIS  
TEST. THE FINAL CHAPTER PRESENTS THE FORMULATION  
OF A SYSTEM ANALYSIS OF THE CIVIL DEFENSE  
ORGANIZATION DESIGNED TO IDENTIFY AND QUANTIFY THOSE  
FUNCTIONS WITH WHICH CIVIL DEFENSE SHOULD BE  
CONCERNED, AND THUS TO PROVIDE A BETTER BASIS FOR  
TESTING OF PLANS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 410 664

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

HIGHER WATER PLANTS AS RELATED TO POLLUTED  
CONTINENTAL BODIES OF WATER,

(U)

MAY 63 9P  
REPT. NO. 19251

KABANOV, N.M.;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF VSESOUZNOE  
GIDROBIOLOGICHESKOE OBSHCHESTVO. TRUDY, USSR, V.  
12, PP. 410-415, 1962. ALSO FROM OTS FOR \$5.50 AS R3  
21844.

DESCRIPTORS: \*PLANTS (BOTANY), (\*MARINE, WATER,  
CONTAMINATION, DAMS, (\*PARASITES), RIVERS, WASTE  
(SANITARY ENGINEER), TEMPERATURE, PURIFICATION, (\*WATER  
SUP, ADAPTATION (PHYSIOLOGY.) (U)

IDENTIFIERS: T-21 PROPELLING CHARGES (120-MM) (U)

TRANSLATION OF SOVIET RESEARCH: HIGHER WATER PLANTS AS  
RELATED TO POLLUTED CONTINENTAL BODIES OF WATER.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 411 319

ARCTIC AEROMEDICAL LAB FORT WAINWRIGHT ALASKA

WATER SUPPLY AND WASTE DISPOSAL PROBLEMS AT REMOTE  
AIR FORCE SITES IN ALASKA, (U)

MAR 63

6P

BAUMGARTNER, D.J.;

PROJ: 8446 1

MONITOR: AAL

TN02 1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE ELEVENTH ALASKAN  
SCIENCE CONFERENCE, ALASKA DIV., AMERICAN  
ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, 30 AUG.  
63, AT ANCHORAGE, ALASKA.

DESCRIPTORS: (\*WATER SUPPLIES, POLAR REGIONS),  
(\*SANITARY ENGINEERING, POLAR REGIONS), DIS, MILITARY  
FACILITIES, WASTES (SANITARY, AIR FORCE RESEARCH, WATER  
FIL, PUBLIC HEALTH. (U)

A REVIEW OF SOME OF THE WATER SUPPLY AND WASTE  
DISPOSAL PROBLEMS AT REMOTE AIR FORCE SITES IS  
PRESENTED. SOME OF THESE PROBLEMS DIRECTLY AFFECT  
HEALTH AND WELL BEING. OTHERS CONCERN UNAESTHETIC  
CONDITIONS AND LACK OF CONVENIENCE, AND ALTHOUGH LESS  
CRITICAL, THEY STILL INFLUENCE MAN'S ABILITY TO  
FUNCTION EFFECTIVELY IN COLD ENVIRONMENTS.  
SPECIFIC PROBLEMS AND THEIR SOLUTIONS ARE  
DISCUSSED AND ILLUSTRATED. EXAMPLES INCLUDE:  
(1) COLOR REMOVAL-THE COLOR REMOVAL FACILITY AT  
THE MIDDLETON ISLAND WATER SUPPLY AND ITS  
APPLICATION TO THE OTHER SITES; (2) IRON  
REMOVAL-PROGRESS IN THE DESIGN OF A COMPACT AND  
SIMPLE IRON REMOVAL FACILITY FOR USE AT REMOTE SITES;  
(3) DISPOSAL OF WASTE IN AREAS WHERE WATER IS  
NOT READILY AVAILABLE-THE AEROBIC RECIRCULATING  
WASTE TREATMENT SYSTEM FOR CONSERVATION OF WATER AND  
DISPOSAL OF WASTES; AND (4) OIL CARRIAGE-  
SEWAGE INCINERATION METHOD OF WASTE DISPOSAL USED AT  
PT. BARROW. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 412 342

AMERICAN HYDROMATH CO NEW YORK

PLANNING GUIDES FOR DUAL-PURPOSE SHELTERS,

(U)

JUL 63 148P

SMITH, ROBERT W.; LASKY, AND

MARY ANN ;

REPT. NO. C93 9 63TK

CONTRACT: OCD 0562 104

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHELTERS, FALLOUT), CIVIL DEFENSE,  
RADIOLOGICAL CONTAMINA, DECONTAMINATION, VENTILATION,  
AIR, PURIFICATION, WATER SUPPLIES, FOOD DISPENSING,  
LIGHTING EQUIPMENT, SANITARY ENGINEERING, DISPOSAL. (U)

THIS DOCUMENT PROVIDES GENERAL PLANNING INFORMATION RELATIVE TO THE PRINCIPAL FACTORS WHICH MUST BE CONSIDERED IN THE DEVELOPMENT OF GROUP FALL OUT SHELTER FACILITIES. IT DISCUSSES A NUMBER OF POSSIBLE METHODS FOR DEALING WITH EACH FACTOR. EMPHASIS IS PLACED UPON THE POTENTIAL DUAL-PURPOSE USE OF FACILITIES USUALLY AVAILABLE WITHIN EXISTING STRUCTURES. THE INFORMATION WHICH IS PROVIDED IS DESIGNED TO PERMIT THE SHELTER PLANNER TO SELECT SPECIFIC METHODS FOR MEETING EACH SHELTER REQUIREMENT ACCORDING TO THE NEEDS AND OPPORTUNITIES DICTATED BY HIS PARTICULAR SITUATION. THE PLANNING AREAS DISCUSSED IN THE REPORT INCLUDE: RADIOLOGICAL PROTECTION, OTHER WEAPON EFFECTS, TEMPERATURE AND ATMOSPHERE CONTROL, WATER SUPPLY, FOOD, LIGHTING, FIRE PROTECTION, MEDICAL, SANITATION, COMMUNICATIONS, SLEEPING FACILITIES, WARNING AND SHELTER ENTRY, AND ORGANIZATION AND MANAGEMENT. (AUTHOR)

(U)

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UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 412 428

NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF

CONSTRUCTION PROBLEMS WITH PILOT SANITARY SYSTEM AT  
POINT BARROW, (U)

JUN 63 24P

NEHLSSEN, W.R.;

REPT. NO. NCEL-TN-512

PROJ: Y-FO15-11-194

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, POLAR), DESIGN,  
CONSTRUCTION, SEWAGE, SEA, DRAINAGE, HEATING, CIVIL  
ENGINEERING. (U)

A PILOT SANITARY SYSTEM WAS DESIGNED TO SERVE FIVE  
FAMILY QUARTERS BUILDINGS AT THE ARCTIC RESEARCH  
LABORATORY AT POINT BARROW, BUT CONSTRUCTION  
PROBLEMS AND SYSTEM FAILURES HAVE THUS FAR PREVENTED  
USE OF THE SYSTEM. THE DESIGN INCLUDED SEA WATER  
INTAKES, A DISTILLATION UNIT AND DISTILLED WATER  
DISTRIBUTION SYSTEM, AND A SEA WATER SANITARY SEWER  
SYSTEM. PROBLEMS ENCOUNTERED INCLUDE INSULATION  
FAILURES CAUSED BY GROUND WATER, PIPE BREAKAGE  
RESULTING FROM FAULTY JOINTS AND HEATING WIRES, AND PIPE  
FREEZING. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 419 288

CORPS OF ENGINEERS WASHINGTON D C

PLUMBING AND GASFITTING - EMERGENCY  
CONSTRUCTION.

(U)

JAN 63 IV

REPT. NO. EM-1110-345-556

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, STAND), (\*PIPE  
FITTINGS, GASES), (\*PIPES, WATER), COMPRESSED AIR,  
MECHANICAL DRAWINGS, WATER SUPPLIES, HEATERS, DESIGN,  
ANALYSIS, GAS FLOW, BUILDINGS. (U)

THIS MANUAL PRESCRIBES THE STANDARDS OF EMERGENCY  
CONSTRUCTION TO BE USED BY ALL ELEMENTS OF THE  
CORPS OF ENGINEERS FOR THE DESIGN OF INTERIOR  
PLUMBING, GAS, AND COMPRESSED-AIR SYSTEMS IN  
BUILDINGS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 419 593

ARMY ENGINEER RESEARCH AND DEVELOPMENT LABS FORT BELVOIR  
VA

DEVELOPMENT OF GLACIER SUBSURFACE WATER SUPPLY AND  
SEWAGE SYSTEMS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. FOR APR 58-SEP 61

FEB 63 48P RODRIGUEZ, RAUL ;

REPT. NO. AERDL-1737

PROJ: DA-8566-02-005, DA-8566-02-001

TASK: 8566-02-001-03

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, POLAR), (\*WATER  
SUPPLIES, GLACIERS), SEWAGE, ARMY RESEARCH, FEASIBILITY  
STUDIES, SNOW, SHAFTS(MACHINE ELEMENTS), HYDROSTATICS,  
ICE, STORAGE, MILITARY, COSTS, DRILLING MACHINES. (U)

REPORT SUMMARIZES DATA OBTAINED BY SANITARY  
SCIENCES BR, USAERDL, ON DEVELOPMENT STUDIES OF  
GLACIER SUBSURFACE WATER SUPPLY AND SEWAGE SYS TEMS.  
REPORT CONCLUDES THAT: (A) DRINKING WATER  
CAN BE OBTAINED FROM GLACIER SUBSURFACE SOURCES MORE  
ECONOMICALLY AND EFFICIENTLY THAN FROM SURFACE SNOW  
MELTING, AND WATER PRODUCED IS NORMALLY NOT  
CONTAMINATED AND IS ACCEPTABLE WITHOUT FURTHER  
TREATMENT. (B) GLACIER SUBSURFACE WELLS CAN  
BE USED AS HEAT SINKS FOR DIS SIPATION OF WASTE HEAT  
OF NUCLEAR REACTORS. (C) SUBSURFACE CAVITIES  
WHICH ARE NO LONGER USED FOR OBTAINING WATER CAN BE  
USED FOR STORAGE OF SUPPLIES AND FUELS AND FOR  
DISPOSAL OF WASTE PRODUCTS INCLUDING LOW-ACTIVITY  
WASTE WATER FROM NUCLEAR REACTORS. (D) THE  
EQUIPMENT INSTALLATION AND OPERATING PROCEDURES  
CONTAINED IN APPENDIX B OF THIS REPORT ARE A  
SIMPLIFIED DESIGN FOR FUTURE GLACIAL WATER SUPPLY  
SYSTEMS USING SUBSURFACE WELLS. (E) DISCHARGE  
OF SEWAGE INTO SUBSURFACE OF GLACIER IS AN ECONOMICAL  
AND RELIABLE METHOD FOR DISPOSAL OF LIQUID WASTES.  
(AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 419 975

ARCTIC AEROMEDICAL LAB FORT WAINWRIGHT ALASKA

VOLATILITY OF HUMAN WASTE AT ELEVATED TEMPERATURES.

(U)

APR 63 16P QUON, J. E. ; PIPES, W. O. ;  
PROJ: 8246 01  
MONITOR: TUR62 47

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: IN COOPERATION WITH NORTHWESTERN  
U., EVANSTON, ILL., CONTRACT AF41 657 383.

DESCRIPTORS: (\*SEWAGE, INCINERATORS), (\*SANITARY  
ENGINEERING, POLAR REGIONS), WASTE (SANITARY  
ENGINEERING), DISPOSAL, OXIDATION, TEMPERATURE,  
IGNITION, VAPORIZATION, MATHEMATICAL ANALYSIS

(U)

THE PRESENT STUDY WAS UNDERTAKEN TO PROVIDE  
INFORMATION UPON WHICH A MORE RATIONAL APPROACH TO  
THE DESIGN OF INCINERATORS FOR HUMAN WASTE CAN BE  
BASED. THE VOLATILE MATTER AND CARBON REMAINING AS  
A FUNCTION OF TIME WERE DETERMINED FOR DIFFERENT  
OPERATING CONDITIONS OF THE VOLATILIZATION CHAMBER.  
AN EQUATION IS PROPOSED TO DESCRIBE THE  
VOLATILIZATION PROCESS, AND THE DEPENDENCE OF THE  
CONSTANTS IN THE VOLATILITY EQUATION UPON TEMPERATURE  
AND UPON THE RATE OF AIR SUPPLY TO THE VOLATILIZATION  
CHAMBER WAS DETERMINED. VOLATILIZATION TEMPERATURES  
AS LOW AS 300 C MAY BE FEASIBLE FOR SOME  
INCINERATOR DESIGNS WHICH PROVIDE A REACTOR FOR THE  
OXIDATION OF THE MATERIAL VOLATILIZED. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 420 147

ARCTIC AEROMEDICAL LAB FORT WAINWRIGHT ALASKA

WASTE DISPOSAL SYSTEM FOR SMALL GROUPS AT REMOTE USAF  
SITES IN THE ARCTIC, (U)

APR 63 7P WALTERS, C. F. ; BAUMGARTNER, D.

J. ;

PROJ: 8246 1

MONITOR: AAL TDR62 46

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*WASTES (SANITARY ENGINEERING), MILITARY  
FACILITIES), (\*TOILET FACILITIES, MILITARY FACILITIES),  
WATER, CHLORINATION, SEWAGE, FREEZING (U)

A WASTE DISPOSAL SYSTEM FOR TWO PEOPLE  
INCORPORATING A MARINE TOILET, CHLORINATOR AND  
STORAGE TANK WAS DESIGNED AND INVESTIGATED BY THE  
ARCTIC HEALTH RESEARCH CENTER TO PROVIDE A  
RECIRCULATING LIQUID FOR TOILET FLUSHING, THUS  
ELIMINATING THE NEED FOR FRESH WATER. THE SYSTEM  
IS NOT INTENDED TO ALLOW BIOLOGICAL OR CHEMICAL  
BREAKDOWN OF THE ORGANIC WASTE, BUT MERELY TO PROVIDE  
AN ACCEPTABLE METHOD OF WASTE STORAGE. ULTIMATE  
DISPOSAL IS REQUIRED. IT IS ANTICIPATED THAT THIS  
SYSTEM WILL PROVIDE A METHOD OF WASTE DISPOSAL FOR  
SMALL GROUPS OF MEN ASSIGNED TO REMOTE RADAR SITES IN  
ALASKA. THE EXPERIMENTAL UNIT PROVED ACCEPTABLE  
FOR A TWO-MEMBER HOUSEHOLD FOR A TRIAL PERIOD OF FIVE  
MONTHS. THE SYSTEM POSSESSES THE FOLLOWING  
CHARACTERISTICS: (1) MINIMUM WATER USE, (2)  
MINIMUM ENERGY USE, (3) NOT SUBJECT TO OR  
RENDERED UNUSABLE BY FREEZING, (4) MINIMUM  
PROBLEM OF ULTIMATE DISPOSAL, (5) MINIMUM ODORS,  
(6) MINIMUM MAINTENANCE AND (7) CONVENTIONAL  
TOILET. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 425 808

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

VAPOR PRESSURE AND EVAPORATION OF SUBSTANCES IN  
MOVABLE AIR,

(U)

NOV 63 15p MATSAK, V. G. ;  
MONITOR: FTD TT63 1044

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM GIGIYENA I SANITARIYA,  
PP. 35-41.

DESCRIPTORS: (\*AIR POLLUTION, WASTE GASES), (\*WASTE  
GASES, AIR POLLUTION), (\*VAPORS, ELASTIC PROPERTIES),  
(\*VAPOR PRESSURE, AIR POLLUTION), (\*SANITARY  
ENGINEERING, AIR POLLUTION), EVAPORATION, HYDROCARBONS,  
HALOGENATED HYDROCARBONS, ORGANIC NITROGEN COMPOUNDS,  
WATER, NOMOGRAPHS, WASTE (INDUSTRIAL), WASTES (SANITARY  
ENGINEERING), MATHEMATICAL ANALYSIS (U)

THE AUTHOR HAS WORKED OUT A NOMOGRAM FOR  
DETERMINATION OF ELASTICITY OF SATURATED VAPOR AND A  
METHOD OF CALCULATING THE RATE OF EVAPORATION OF  
VARIOUS CHEMICAL SUBSTANCES IN MOVING AIR. THESE  
DATA ARE NECESSARY FOR EVALUATION OF POTENTIAL DANGER  
OF TOXIC SUBSTANCES AND FOR CALCULATION OF  
INDUSTRIAL VENTILATION. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 426 899

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE DAILY LIFE OF THE STAR MAN,

(U)

DEC 63 BP GUBAREV, V. I.  
MONITOR: FTD TT63 1072

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM KOMSOMOL'SKAYA PRAVDA,  
MOSCOW, P. 4, JUNE 10, 1963.

DESCRIPTORS: (\*ASTRONAUTS, REPORTS), (\*MANNED,  
MAINTENANCE), FOOD DISPENSING, WASTES (SANITARY  
ENGINEERING), TASTE, WATER, EXERCISE.

(U)

TRANSLATION OF FOREIGN RESEARCH ON THE NORMAL LIFE OF AN  
ASTRONAUT ABOARD A SPACECRAFT.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 427 413

RADIATION APPLICATIONS INC LONG ISLAND CITY N Y

THE FEASIBILITY OF USING MEMBRANES FOR URINE  
PURIFICATION.

(U)

DESCRIPTIVE NOTE: REPT. FOR JUNE 62-JUNE 63,  
NOV 63 31P MEIER, ERIC A. IEVERETT,  
RICHARD, JR.;

CONTRACT: AF33 657 9347

PROJ: 6373

TASK: 637304

MONITOR: AMRL

TDR63 113

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON EQUIPMENT FOR LIFE  
SUPPORT IN AEROSPACE.

DESCRIPTORS: (•URINE, PURIFICATION), (•WATER, RECOVERY),  
FEASIBILITY STUDIES, FILTERS (FLUID), MEMBRANES  
(BIOLOGY), WASTES (SANITARY ENGINEERING)

(U)

THE FEASIBILITY OF USING SYNTHETIC MEMBRANES IN AN  
ULTRAFILTRATION PROCESS FOR RECOVERING POTABLE WATER  
FROM URINE WAS DEMONSTRATED WITH URINE SPECIMENS  
WHICH HAD BEEN ENZYMATICALLY TREATED AND ACIDIFIED  
WITH CITRIC ACID. SPECIALLY CAST CELLULOSE ACETATE  
MEMBRANES WERE USED IN AN EXPERIMENTAL  
ULTRAFILTRATION SYSTEM TO RECLAIM WATERS WHICH MET  
THE UNITED STATES PUBLIC HEALTH SERVICE  
SPECIFICATIONS ON CHLORIDE ION AND TOTAL DISSOLVED  
SOLIDS. THE PRODUCT WATER WAS OBTAINED AT INITIAL  
FLUX RATES OF APPROXIMATELY 10-20 LITERS PER SQUARE  
FOOT OF FILTRATION SURFACE PER DAY AT OPERATING  
PRESSURES OF APPROXIMATELY 2000 POUNDS PER SQUARE  
INCH. A PROPOSED DESIGN OF AN ULTRAFILTRATION UNIT  
IS INCLUDED ALONG WITH A COMPREHENSIVE DISCUSSION OF  
THE ENGINEERING CONSIDERATIONS DEEMED SIGNIFICANT.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 427 568

OREGON STATE UNIV CORVALLIS

AIRCRAFT WASHRACK WASTES, THEIR CHARACTERISTICS AND  
TREATMENT, (U)

JUN 64 77P EVANS, DAVID ROLAND ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (\*AIRCRAFT, MAINTENANCE), (\*CLEANING  
COMPOUNDS, DISPOSAL), (\*WASTES (SANITARY ENGINEERING),  
SEWAGE), (\*WATER SUPPLIES, CONTAMINATION), SURFACE  
ACTIVE SUBSTANCES, PAINT REMOVERS (U)

A STUDY OF AIRCRAFT WASHRACK WASTE CHARACTERISTICS  
AND TREATMENT METHODS IS PRESENTED. THE FIRST  
SECTION REVIEWS AVAILABLE LITERATURE INCLUDING PAST  
EXPERIMENTAL ANALYSIS. THE SECOND SECTION SURVEYS  
CURRENT WASHRACK INSTALLATIONS AND TREATMENT  
FACILITIES AT 65 AIR FORCE BASES IN THE UNITED  
STATES. THE FINAL SECTION CONTAINS AN  
EXPERIMENTAL ANALYSIS OF THE WASHRACK WASTES AND THE  
TREATMENT FACILITY AT PORTLAND AFB, OREGON. OIL  
CONCENTRATION, FIVE-DAY BOD., SUSPENDED SOLIDS,  
TOTAL SOLIDS, AND EFFLUENT OVER-FLOW ARE USED TO  
MEASURE THE WASTE CHARACTERISTICS AND FLOW AND TO  
DETERMINE THE EFFICIENCY OF A GRAVITY OIL SEPARATOR  
AT THE PORTLAND BASE. A TESTING PROCEDURE FOR  
DETERMINING OIL CONCENTRATIONS IS DEVELOPED.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 430 814

LIBRARY OF CONGRESS WASHINGTON D C SCIENCE AND TECHNOLOGY  
DIV

BIBLIOGRAPHY OF BIOREGENERATING SYSTEMS FOR  
EXTRATERRESTRIAL HABITATION.

(U)

DESCRIPTIVE NOTE: REPT. 15 AUG 62-15 SEP 63,

NOV 63 100P SPIEGLER, PAUL E. ;

CONTRACT: AF33 657 62 397

PROJ: 7164

TASK: 716405

MONITOR: AMRL

TDR63 121

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*LIFE SUPPORT, BIBLIOGRAPHIES),  
(\*EXTRATERRESTRIAL BASES, LIFE SUPPORT), (\*BIOLOGY,  
REGENERATION), ECOLOGY, PHYSIOLOGY, SANITARY  
ENGINEERING, FOOD, ALGAE, PLANTS (BIOLOGY), TISSUE  
(BIOLOGY), LABORATORY ANIMALS, MOON, SPACE FLIGHT,  
NUTRITION, TISSUE CULTURE, TEST METHODS, TOXICITY,  
PHOTOSYNTHESIS, BACTERIA, FUNGI, SPACE PROBES  
IDENTIFIERS: BIOLOGICAL SYSTEMS, HABITATION

(U)

(U)

THIS BIBLIOGRAPHY IS A REPRESENTATIVE SAMPLING WITH  
THE WORLD'S LITERATURE COVERING THE YEARS 1959 TO THE  
PRESENT CONCERNING THE VARIOUS ASPECTS OF  
EXTRATERRESTRIAL HABITATION. THE 440 REFERENCES  
DEAL WITH BOTH THE PHYSIOLOGY AND ECOLOGY OF  
BIOREGENERATING SYSTEMS FOR SPACE TRAVEL AND THE  
SPECIFIC HUMAN REQUIREMENTS FOR EXTRATERRESTRIAL  
HABITATION. THE SECTION ON THE BIOLOGY OF  
BIOREGENERATING SYSTEMS CONTAINS PAPERS ON WASTE  
MANAGEMENT AND RE-UTILIZATION, GAS EXCHANGE  
MECHANISMS USING DIFFERENT PLANTS, CULTURE TECHNIQUES  
FOR PRODUCING FOOD BY UTILIZING TISSUES OR PLANTS,  
EDIBILITY OF ALGAE AND VARIOUS ANIMALS, TOXICOLOGICAL  
ASPECTS OF WASTE AND MATERIALS OF CONSTRUCTION, AND  
ENVIRONMENTAL CONDITIONS ON THE MOON. PAPERS  
DEALING WITH SPECIFIC HUMAN REQUIREMENTS INCLUDE  
THOSE ON NUTRITION, FOOD TECHNOLOGY, AND VARIOUS  
TOPICS OF PERSONAL HYGIENE AND SANITATION.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 433 574

WHIRLPOOL CORP ST JOSEPH MICH

HUMAN WASTE COLLECTION AND STORAGE DURING AEROSPACE  
FLIGHT. (U)

DESCRIPTIVE NOTE: REPT. FOR 1 JUNE 62-20 MAY 63,  
FEB 64 78P ROTH, NORMAN G. ; SYMONS,

JOHN J. ; COHEN, DAVE ; WHEATON, ROBERT B. ;

CONTRACT: AF33 657 9131

PROJ: AF-6373

TASK: 637305

MONITOR: AMRL

TDR64 3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EQUIPMENT FOR LIFE SUPPORT IN  
AEROSPACE.

DESCRIPTORS: (•URINE, COLLECTING METHODS), SECRETION,  
STORAGE, ODORS, CONTAINERS, MICROORGANISMS, SANITARY  
ENGINEERING, PATHOLOGY, BAGS (CONTAINERS), WASTES  
(SANITARY ENGINEERING) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 434 217

NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF

A TEMPORARY POLAR CAMP.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAR 64 126P SHERWOOD, G. E. ;

REPT. NO. NCEL-TR-288

PROJ: Y FO15 11 104

UNCLASSIFIED REPORT

DESCRIPTORS: (\*BUILDINGS, CONSTRUCTION), AIR  
CONDITIONING EQUIPMENT, DESIGN, SANITARY ENGINEERING,  
SHELTERS, MEDICINE, WATER SUPPLIES, STORAGE, RECREATION,  
DISTRIBUTION, WASTES (SANITARY ENGINEERING), HEATING (U)  
IDENTIFIERS: ARCTIC REGIONS, CAMPS (U)

A TEMPORARY POLAR CAMP WAS DEVELOPED TO PROVIDE COMFORTABLE LIVING CONDITIONS FOR PERIODS UP TO 5 YEARS IN THE ARCTIC AND ANTARCTIC. THE CAMP DESIGN INCLUDES STRUCTURES, AIR CONDITIONING, WATER SUPPLY, SANITATION, AND OTHER FACILITIES INTEGRATED TO FORM A UNIFIED FUNCTIONAL COMPONENT. THE BASIC CAMP WAS DESIGNED FOR 50-MAN OCCUPANCY AND EXPANSION IN 50-MAN INCREMENTS TO A 200-MAN CAPACITY. EACH MAN IS PROVIDED WITH AN INDIVIDUAL ROOM. DOUBLE BUNKS MAY BE USED, WITH TWO MEN SHARING A ROOM TO INCREASE THE CAMP CAPACITY FOR SHORT PERIODS. THE BUILDING UNIT IS THE MODIFIED T-5, VARIOUSLY OUTFITTED FOR USE AS QUARTERS, MESSING, GALLEY, UTILITIES, ADMINISTRATION, COMMUNICATIONS, RECREATION, MEDICAL, HEAD, LAUNDRY, AND STORAGE FACILITIES. A DUPLEX CONCEPT IS USED BY WHICH TWO BUILDING UNITS ARE JOINED END TO END BY A SERVICE CORE WHICH HOUSES AN AIR-CONDITIONING SYSTEM, HEAD, AND LAUNDRY, TO FORM A BASIC BUILDING. A T-5M MAINTENANCE SHELTER IS PROVIDED FOR MAINTENANCE OF CAMP EQUIPMENT. THE COMPONENT PARTS OF THE PACKAGED CAMP ARE LIGHTWEIGHT AND COMPACT FOR TRANSPORT BY C-130 OR OTHER AIRCRAFT. ALL COMPONENTS ARE PREFABRICATED FOR FAST, EASY ERECTION EVEN UNDER THE EXTREME WEATHER CONDITIONS PREVALENT IN POLAR REGIONS. (AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 435 164

VIRGINIA AGRICULTURAL EXPERIMENT STATION BLACKSBURG

EVALUATION OF SOILS AND USE OF SOIL SURVEYS FOR  
ENGINEERING PURPOSES IN URBAN DEVELOPMENT, (U)

OCT 63 78P KREBS, R. D. ; HUNTER, J. H. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*SOILS, URBAN AREAS), (\*SEWAGE, DISPOSAL),  
SANITARY ENGINEERING, WASTES (SANITARY ENGINEERING),  
SEWAGE, MAPPING, DISPOSAL, ABSORPTION (PHYSICAL), SOIL  
MECHANICS, TERRAIN, GEOLOGICAL SURVEY, DRAINAGE,  
GEORGIA, TENNESSEE (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 455 401

NAVY MARINE ENGINEERING LAB ANNAPOLIS MD

SURVEY TO DETERMINE QUANTITIES AND PROPERTIES OF  
SEWAGE FROM NAVAL VESSELS, (U)

JAN 65 8P JAKOBSON, K. ; POSNER, M. J. ;  
REPT. NO. 346 64

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*NAVAL VESSELS (COMBATANT); WASTES  
(SANITARY ENGINEERING)); (\*WASTES (SANITARY  
ENGINEERING); HARBORS); WATER, SEWAGE, PHYSICAL  
PROPERTIES, BACTERIA, BIOASSAY, CHEMICAL ANALYSIS,  
RIVERS (U)

A SHIPBOARD SURVEY TO DETERMINE THE QUANTITIES OF  
HUMAN WASTES PRODUCED PER CAPITA AND THE PHYSICAL,  
BIOLOGICAL, BACTERIOLOGICAL AND CHEMICAL PROPERTIES  
WAS CONDUCTED TO ESTABLISH THE DEGREE OF POLLUTION OF  
HARBOR WATERS BY NAVAL VESSELS AND PROVIDE DESIGN  
CRITERIA FOR A TREATMENT SYSTEM. THE DATA SHOW THAT  
BETWEEN 10 AND 20 GPD OF SEWAGE ARE PRODUCED PER  
CAPITA ON SHIPS FOLLOWING A NORMAL WORKDAY ROUTINE.  
A MAXIMUM OF TWICE THIS AMOUNT CAN BE EXPECTED OF  
THE OPERATION IS ON AN AROUND-THE-CLOCK BASIS. THE  
SEWAGE PRODUCED CONTAINS AN AVERAGE OF 236 MG/L OF  
SUSPENDED SOLIDS AND AN AVERAGE BIOCHEMICAL OXYGEN  
DEMAND (BOD) OF 102 PPM. THE GEOMETRIC AVERAGE  
COLIFORM DENSITY INDEX WAS FOUND TO BE  $4.8 \times 10$  TO  
THE 5TH POWER. DATA IS ALSO PRESENTED FOR THE  
CONCENTRATION OF SETTLEABLE SOLIDS, TOTAL SOLIDS AND  
VOLATILE SOLIDS PRESENT. THE PH OF THE SEWAGE  
AND THE DISSOLVED OXYGEN PRESENT AND THE  
CONCENTRATION OF NITROGEN PRESENT IN VARIOUS FORMS  
WERE DETERMINED. THE SURVEY ALSO SHOWED THAT THE  
WATER IN THE VICINITY OF A VESSEL FROM WHICH SEWAGE  
IS BEING DISCHARGED IS NOT POLLUTED TO ANY ADVERSE  
DEGREE IN TERMS OF THE COMMONLY USED PARAMETERS.  
VIRTUALLY NO SUSPENDED SOLIDS WERE FOUND IN THE  
RIVER WATER AND THE COLIFORM DENSITY WAS WITHIN THE  
RANGE PERMITTED AT MOST BATHING BEACHES IN THE  
UNITED STATES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 602 124

IIT RESEARCH INST CHICAGO ILL

SHELTER EQUIPMENT PLANNING GUIDELINES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

JUN 64 414P

CONTRACT: OCD OS62 195 ,PROJ.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (SHELTERS, SURVIVAL(PERSONNEL)), FALLOUT, SURVIVAL KITS, ELECTRIC POWER PRODUCTION, POWER SUPPLIES, AIR CONDITIONING EQUIPMENT, VENTILATION, WATER SUPPLIES, WASTES (SANITARY ENGINEERING), CLOSED ECOLOGICAL SYSTEMS, DISPOSAL, COMMUNICATION SYSTEMS, FIRE SAFETY, NOISE, FOOD, MEDICINE, RADIATION MONITORS, DOSIMETERS (U)

THE OBJECTIVE OF THE STUDY IS TO ESTABLISH A SERIES OF GUIDELINES FOR COMMUNITY SHELTER EQUIPMENT AND SUPPLY PLANNING. SPECIFICALLY, THE STUDY WAS DESIGNED TO DETERMINE THE TYPE OF EQUIPMENT AND SUPPLIES WHICH ARE NECESSARY FOR HUMAN SURVIVAL WITHIN THE PROTECTIVE AREA OF A COMMUNITY FALLOUT SHELTER AND THE MANNER IN WHICH THE EQUIPMENT AND SUPPLIES SHOULD BE MAINTAINED BEFORE AND DURING SHELTER OCCUPANCY. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 603 013

GENERAL DYNAMICS CORP GROTON CONN ELECTRIC BOAT DIV

RESEARCH ON A WASTE SYSTEM FOR AEROSPACE  
STATIONS.

(U)

DESCRIPTIVE NOTE: REPT. FOR APR 63-JAN 64,  
MAY 64 86P WALLMAN, HAROLD ; DODSON, JOHN

REPT. NO. U413 64 056  
CONTRACT: AF33 657 11489  
PROJ: 6373  
TASK: 637305  
MONITOR: AMRL TDR64 33

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*WASTES (SANITARY ENGINEERING), AEROSPACE  
CRAFT), (\*SPACE STATIONS, WASTES (SANITARY ENGINEERING),  
(\*CLOSED-CYCLE ECOLOGICAL SYSTEMS, SPACE STATIONS),  
URINE, INCINERATORS, DISPOSAL, COLLECTING METHODS,  
STORAGE, CONTAINERS), DISTILLING PLANTS, VACUUM  
APPARATUS, PYROLYSIS, FREEZE DRYING, METABOLISM, SPACE  
BIOLOGY (U)  
IDENTIFIERS: FECES (U)

AN ENGINEERING EVALUATION WAS CONDUCTED TO SELECT  
AN OPTIMUM WASTE MANAGEMENT SYSTEM FOR COLLECTION,  
STORAGE, AND/OR DISPOSAL OF FECES AND URINE IN A  
SPACE STATION UNDER WEIGHTLESS CONDITIONS. BASED  
ON THIS STUDY, A DETAILED DESIGN OF AN OPTIMUM WASTE  
MANAGEMENT SYSTEM WAS PREPARED FOR A 7-MAN, 15-DAY  
MISSION. TESTS PERFORMED ON A BREADBOARD MODEL OF  
THE FECES COLLECTOR DEMONSTRATED THE FEASIBILITY OF  
THE SELECTED APPROACH. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 603 055

BOEING CO SEATTLE WASH

THE EFFECTS OF MISCELLANEOUS WASTES ON MESOPHILIC  
ACTIVATED SLUDGE CELLULOSE, (U)

MAY 64 13P

OKEY, R. W. ; COHEN, R. L. ;

CHAPMAN, D. D. ;

CONTRACT: AF41 657 387

TASK: 793001

MONITOR: SAM ,

TDR64 25

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•WASTES (SANATARY ENGINEERING); DISPOSAL);  
(•CELLULOSE, DEGRADATION); (•MICROORGANISMS;  
METABOLISM); CULTURE MEDIA, CARBON, ENZYMES, BUFFERS,  
MANOMETERS, CONFINED ENVIRONMENTS, SPACECRAFT (U)

A BROAD SPECTRUM MICROBIAL CULTURE SIMILAR TO  
ACTIVATED SLUDGE IN UTILIZING CELLULOSE WAS EVALUATED  
FOR ITS ABILITY TO UTILIZE WASTES. THE METABOLISM  
OF CELLULOSE WAS FOLLOWED IN WARBURG AND SUBSTRATE  
DEPLETION STUDIES BY UTILIZING MEASUREMENTS OF  
CHEMICAL OXYGEN DEMAND. ACTIVATED SLUDGES WERE  
DEVELOPED ON CELLULOSE AS A SOLE CARBON SOURCE AND ON  
HUMAN WASTE WITH ADDED CELLULOSE DESIGNED TO SIMULATE  
THE WASTE WHICH WOULD BE RECEIVED IN A REMOTE  
ENVIRONMENT. FROM THE WARBURG AND SUBSTRATE  
DEPLETION STUDIES, CONSTANTS OF FIRST-ORDER OXIDATION  
RATE WERE OBTAINED. THE FIRST-ORDER OXIDATION  
CONSTANTS WERE FOUND TO VARY BETWEEN 0.0133 AND  
0.0146 RECIPROCAL HOURS. IT WAS OBSERVED THAT A  
LAG PERIOD VARYING FROM 400 TO 1,500 MINUTES PRECEDED  
THE UTILIZATION OF CELLULOSE BY THE MICROBIAL SYSTEM.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 605 257

ARCTIC HEALTH RESEARCH CENTER ANCHORAGE ALASKA

TREATMENT OF UNDILUTED HUMAN WASTE BY THE ACTIVATED  
SLUDGE PROCESS. (U)

MAR 64 14P BAUMGARTNER, D. J. ; WALTERS, C.

F. i

PROJ: 8246

TASK: 8246 1

MONITOR: AAL ,

TDR63 36

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED UNDER CROSS SERVICE  
AGREEMENT CSA 61-1.

DESCRIPTORS: (\*WASTES (SANITARY ENGINEERING), ALASKA),  
(\*RADAR STATIONS, WASTES (SANITARY ENGINEERING)), TOILET  
FACILITIES, ARCTIC REGIONS, SEWAGE, EXCRETION, HUMANS,  
PH FACTOR, WATER, ODORS, COLD WEATHER TESTS, MODELS  
(SIMULATIONS), AIR FORCE RESEARCH (U)

A LABORATORY ACTIVATED SLUDGE SYSTEM WAS OPERATED  
TO CONFIRM FIELD INVESTIGATIONS WHICH INDICATED THAT  
A 423GALLON RECIRCULATING ACTIVATED SLUDGE SYSTEM  
COULD ADEQUATELY TREAT THE UNDILUTED HUMAN WASTES  
FROM 10 MEN FOR AT LEAST SIX MONTHS AND PROVIDE AN  
EFFLUENT ACCEPTABLE FOR USE AS A FLUSHING FLUID.  
IN ADDITION, THE LEVEL AND THE EFFECTS OF  
OVERLOADING WERE NOTED. THE EFFECT OF HIGH PH ON  
ODOR PRODUCTION WAS OBSERVED, AND THE IMPORTANCE OF  
PH CONTROL BETWEEN 6 AND 7 WAS DEMONSTRATED. THE  
FEED COD OF 44,000 MG/L (BOD = 21,000 MG/L)  
WAS REDUCED BY ABOUT 90 PER CENT AND THE ESTIMATED  
WATER SAVINGS FOR TOILET FLUSHING WAS ESTIMATED AT  
GREATER THAN 90 PER CENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 608 683

COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

PERFORMANCE OF SUBSURFACE DRAINS AT SELECTED  
AIRFIELDS DURING THE 1960 FROST MELTING PERIOD, (U)

OCT 64 24P SAYMAN, WILLIAM C. ; GILMAN,  
GEORGE D. ;  
MONITOR: CRREL , SR69

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: LEGIBILITY OF THIS DOCUMENT IS IN PART  
UNSATISFACTORY. REPRODUCTION HAS BEEN MADE FROM BEST  
AVAILABLE COPY.

DESCRIPTORS: (\*LANDING FIELDS, DRAINAGE), (\*DRAINAGE,  
LANDING FIELDS), WATER, DISPOSAL, PIPES, AIRPORTS,  
MILITARY FACILITIES, SOILS, FREEZING, MELTING, CIVIL  
ENGINEERING, SANITARY ENGINEERING (U)

DURING THE 1960 FROST MELTING PERIOD, THE  
PERFORMANCE OF SUBSURFACE DRAINAGE SYSTEMS WAS  
INVESTIGATED AT SELECTED AIRFIELDS IN THE NORTHERN  
CONTINENTAL UNITED STATES BY PERIODIC  
OBSERVATIONS AT MANHOLES AND/OR RISERS. RECORDS OF  
AIR TEMPERATURE, SUBSURFACE TEMPERATURE, AND  
PRECIPITATION WERE ALSO MAINTAINED. THE  
OBSERVATIONS WERE ONE-TIME 'SPOT' NOTATIONS, INTENDED  
TO DETERMINE THE FEASIBILITY OF PERFORMING MORE  
COMPREHENSIVE STUDIES AND NO QUANTITATIVE  
MEASUREMENTS WERE UNDERTAKEN; NOR DO THE DATA  
OBTAINED PERMIT EVALUATION AS TO THE OVERALL  
EFFECTIVENESS OF THE INSPECTED SYSTEMS OR THE  
VALIDITY OF THE CRITERIA USED IN THEIR DESIGN.  
HOWEVER, THE STUDY SHOWED THAT THE OBSERVED  
SUBDRAIN SYSTEMS WERE GENERALLY PERFORMING THEIR  
FUNCTION OF REMOVING SUBSURFACE WATER. THE STUDY  
ALSO CONFIRMS THE NEED FOR PERIODIC INSPECTION AND  
MAINTENANCE OF ALL SUBSURFACE SYSTEMS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 611 769

ENGINEERING-SCIENCE INC ARCADIA CALIF

POSTATTACK SANITATION WASTE DISPOSAL, PEST AND VECTOR  
CONTROL REQUIREMENTS AND PROCEDURES. (U)

FEB 65 123P

TASK: 3441A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*INFECTIOUS DISEASES, CONTROL), (\*DISEASE  
VECTORS, CONTROL), (\*PEST CONTROL, PUBLIC HEALTH),  
(\*WASTES (SANITARY ENGINEERING), DISPOSAL),  
GASTROINTESTINAL SYSTEM, BACTERIA, ENTEROBACTERIACEAE,  
PARASITIC DISEASES, RICKETTSIA, RODENTS, CULICIDAE,  
DIPTERA, DISEASES, SHELTERS, NUCLEAR EXPLOSIONS,  
EXPLOSION EFFECTS, ECOLOGY, CLIMATE, GEOGRAPHY, UNITED  
STATES, POPULATION, SANITARY ENGINEERING, PASSIVE  
DEFENSE (U)

IN THE EVENT OF A NUCLEAR ATTACK ON THE UNITED  
STATES, ENVIRONMENTAL DISEASE CONTROL MEASURES WILL  
BE INTERRUPTED WITH THE SURVIVING POPULATION EXPOSED  
TO THE ENSUING DISEASE HAZARDS. THE REPORT  
CONSIDERS THE PROBABILITY OF THE OCCURRENCE OF SOME  
14 DISEASES THAT MIGHT DEVELOP, EVALUATES THE  
EFFECTIVENESS OF AVAILABLE CONTROL MEASURES AND  
DETERMINES THE TOTAL OPERATIONAL REQUIREMENT FOR  
RECOVERY OF ENVIRONMENTAL SANITATION IN TERMS OF  
MANPOWER, EQUIPMENT AND MATERIAL. THE ENTERIC  
INFECTIONS (SHIGELLOSIS, INFECTIOUS HEPATITIS,  
SALMONELLOSIS, TYPHOID AND AMOEBIASIS),  
ESPECIALLY SHIGELLOSIS (BACILLARY DYSENTERY),  
ARE ASSIGNED A LEADING ROLE AMONG THE DISEASES TO BE  
CONTROLLED, THUS INDICATING A COMPELLING NEED FOR THE  
PROMPT REMOVAL AND SANITARY DISPOSAL OF HUMAN FECES  
AND OF SPOILED FOOD AND OTHER DECOMPOSABLE FLY  
BREEDING POTENTIAL ORGANIC MATERIAL. OTHER HAZARDS  
INCLUDE MOSQUITO-BORNE ENCEPHALITIS, RABIES,  
MURINE TYPHUS, PLAGUE, LEPTOSPIROSIS, ROCKY  
MOUNTAIN SPOTTED FEVER, DENGUE, MALARIA AND  
YELLOW FEVER. SIGNIFICANTLY EFFECTIVE CONTROL  
OF THESE DISEASE HAZARDS IN THE POSTATTACK  
ENVIRONMENT IS POSSIBLE THROUGH THE UTILIZATION OF  
MATERIAL AND EQUIPMENT PROPERLY POSITIONED FOR PROMPT  
POSTATTACK OPERATIONS. THE MAGNITUDE OF THESE  
NEEDS (MATERIAL, EQUIPMENT AND MANPOWER) IS  
DEVELOPED FOR AN ESTIMATED METROPOLITAN POPULATION OF  
88 MILLION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 612 266

NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF

RECOVERY OF LAUNDRY WASTE WATER FOR SHORE  
STATIONS.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. FOR JUN 62-DEC  
64.

MAR 65 16P NEHLSSEN, W. R. ;  
REPT. NO. NCEL-TR-368  
PROJ: Y FOIS 99 01 055

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER SUPPLIES, NAVAL SHORE FACILITIES),  
(\*NAVAL SHORE FACILITIES, WATER SUPPLIES), (\*WASTES  
(SANITARY ENGINEERING), DISTILLATION), LAUNDRY  
OPERATIONS, FLOTATION (SEPARATION), CLEANING COMPOUNDS,  
INDUSTRIAL PLANTS, RECOVERY, MIDWAY (U)

A LAUNDRY WASTE-WATER-RECOVERY UNIT WAS IN-SERVICE  
TESTED AT THE MIDWAY NAVAL STATION EXCHANGE  
LAUNDRY. TREATMENT RESULTS WERE COMPARABLE TO  
THOSE OBTAINED AT NCEL, ALTHOUGH COSTS WERE HIGHER  
THAN PREVIOUSLY ESTIMATED. AN ANALYSIS OF TEST  
RESULTS INDICATES THAT THE UNIT IS NOT SUITABLE FOR  
INCLUSION IN THE FUNCTIONAL COMPONENT SYSTEM.  
HOWEVER, THE PROCESS ITSELF MAY BE USED AT  
PERMANENT STATIONS TO SUPPLEMENT WATER SUPPLIES BY 5  
TO 20%. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 614 996

ARCTIC HEALTH RESEARCH CENTER ANCHORAGE ALASKA

OBSERVATIONS ON A SEWAGE OXIDATION POND IN  
SOUTHCENTRAL ALASKA,

(U)

JAN 65 24P HILLIARD, D. K. ;  
PROJ: 8246  
TASK: 824601  
MONITOR: AAL , TDR-64-17

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*SEWAGE, OXIDATION); (\*ALGAE, FOULING);  
(\*PLANKTON, FOULING); SANITARY ENGINEERING;  
PHOTOSYNTHESIS, AMMONIUM COMPOUNDS, PHOSPHORUS  
COMPOUNDS, PHOSPHATES, CHEMICAL ANALYSIS, TEMPERATURE,  
FREEZING, ICE, ODORS, OXYGEN, PH FACTOR, ALASKA (U)  
IDENTIFIERS: BIOCHEMICAL OXYGEN DEMAND (U)

THE WATER CHEMISTRY OF THIS FACILITY INDICATED THAT  
DURING THE PERIOD OF MAXIMUM PHOTOSYNTHETIC ACTIVITY  
(MAY THROUGH AUGUST), AMMONIUM COMPOUNDS AND  
PHOSPHATE PHOSPHORUS APPEARED TO BE READILY UTILIZED  
BY THE ALGAE, BUT DURING THE COLDER MONTHS THESE  
COMPOUNDS BUILT UP SIGNIFICANTLY. SIMILARLY, THE  
BIOLOGICAL OXYGEN DEMAND (BOD) WAS GENERALLY LOW  
DURING THE WARMER MONTHS (30 MG/L OR LESS) BUT  
INCREASED APPRECIABLY WITH THE ADVENT OF ICE COVER.  
THE PH AND DISSOLVED OXYGEN CONTENT BOTH INDICATE  
A PHOTOSYNTHETICALLY HEALTHY REGIME DURING THE WARMER  
MONTHS, BUT THE LATTER PARAMETER BECAME DEPRESSED  
WITH OCCURRENCE OF ICE. POND ODOR WAS NOT  
DETECTABLE UNTIL AFTER ICE COVER HAD FORMED.  
PLANKTON ANALYSES INDICATED 18 TAXA OF  
PHOTOSYNTHETICALLY ACTIVE ALGAE, BELONGING  
PRINCIPALLY TO CHLOROCUCCALES AND VOLVOCALES.  
OF THE LAST NAMED ORDER, 11 SPECIES ARE NEW FOR  
NORTH AMERICA AND PRESUMABLY ARE NEW RECORDS AS  
SEWAGE-TOLERANT ORGANISMS. THE ALASKAN POND WAS  
COMPARED WITH AN EXPERIMENTAL POND RECEIVING  
COMPARABLE BOD LOADING AT FAYETTE, MISSOURI,  
AND THE RESULTS ARE DISCUSSED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 615 087

ARCTIC HEALTH RESEARCH CENTER ANCHORAGE ALASKA

DESIGN CRITERIA FOR A SEWAGE OXIDATION POND IN ARCTIC  
ALASKA. (U)

FEB 65 18P WILSON, WALTER R. ;  
PROJ: 8246  
TASK: 824601  
MONITOR: AAL , TDR-64-19

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*SEWAGE, OXIDATION), (\*WASTE (SANITARY  
ENGINEERING), TANKS (CONTAINERS)), (\*TANKS (CONTAINERS),  
DESIGN), SANITARY ENGINEERING, ARCTIC REGIONS, SPORES,  
PROCESSING, AIR FORCE, ALASKA (U)

THROUGH AN INTERSERVICE AGREEMENT WITH THE  
AIR FORCE, THE ENVIRONMENTAL SANITATION  
SECTION (ESS) OF THE ARCTIC HEALTH RESEARCH  
CENTER (AMRC) HAS PREPARED DESIGN CRITERIA FOR  
THE CONSTRUCTION OF AN EXPERIMENTAL ANAEROBIC POND  
FOLLOWED IN SERIES BY AN AEROBIC POND FOR TREATING  
SEWAGE FROM THE BASE. BECAUSE OF THE ANNUAL 6-  
MONTH PERIOD OF ICE COVER IN THIS LOCALE, THE  
ANAEROBIC POND HAS BEEN DESIGNED LARGE ENOUGH TO  
STORE THE ENTIRE WINTER SEWAGE FLOW OF 12 MILLION  
GALLONS. DURING THE SUMMER MONTHS THE STORED  
SEWAGE WILL BE FED INTO THE AEROBIC POND FOR A 10-DAY  
RETENTION PERIOD WITH SUBSEQUENT DISCHARGE. IT IS  
HYPOTHESIZED THAT THE ALMOST CONTINUAL SUMMER  
SUNLIGHT WILL GREATLY INCREASE ALGAL ACTION AND  
SATISFACTION OF BIOLOGICAL OXYGEN DEMAND  
(BOD), RESULTING IN ADEQUATE TREATMENT WITH A  
SHORTER DETENTION TIME AND HIGHER BOD LOADINGS THAN  
ARE GENERALLY USED. ESS WILL MONITOR THE OPERATION  
OF THE POND UPON ITS COMPLETION TO DETERMINE  
OPERATING EFFICIENCIES, OPTIMUM LOADING AND BACTERIAL  
AND CHEMICAL PHENOMENA DURING THE DIFFERENT SEASONS.  
RESULTS OF THE STUDY SHOULD PERMIT ESTABLISHMENT OF  
MORE EXACT DESIGN CRITERIA FOR FUTURE ARCTIC SEWAGE  
OXIDATION PONDS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 617 290  
PITTSBURGH UNIV PA

ENGINEERING BEHAVIOR OF A WASTE CONVERSION END  
PRODUCT.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
65 120P DE BLUNK, DONALD MATTHEW ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*WASTES(SANITARY ENGINEERING), DISPOSAL),  
(\*STRUCTURAL PROPERTIES, WASTES(SANITARY ENGINEERING)),  
(\*MATERIALS, CIVIL ENGINEERING), SANITARY ENGINEERING,  
FOUNDATIONS(STRUCTURES), EARTH, SOIL MECHANICS,  
COMPRESSIVE PROPERTIES, STRESSES, DENSITY,  
TRAFFICABILITY, STABILITY

(U)

THE LABORATORY INVESTIGATION REPORTED IS CONCERNED  
WITH THE ENGINEERING BEHAVIOR OF THE COMPOST MATERIAL  
IN A COMPACTED FILL OBTAINED FROM PROCESSING WASTE  
PRODUCTS AND SEWAGE. FROM THE INFORMATION OBTAINED  
IN THE LABORATORY, IT IS POSSIBLE TO RECOMMEND 1)  
THE BEST METHOD OF PLACEMENT, 2) THE ALLOWABLE  
BEARING CAPACITY, 3) THE SLOPE STABILITY, AND, 4)  
THE EXPECTED SETTLEMENT OF THE MATERIAL PLACED IN A  
LANDFILL. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 617 533

NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF

SURVEY OF ANTARCTIC WATER SUPPLY AND WASTE DISPOSAL  
FACILITIES, PRACTICES, AND PROBLEMS. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE FOR JAN-MAR 65,  
APR 65 38P DROBNY, NEIL L. ;

REPT. NO. NCEL-TN-708

PROJ: Y FO15 11 01 105

UNCLASSIFIED REPORT

DESCRIPTORS: (•POLAR REGIONS, WATER SUPPLIES), (•WATER  
SUPPLIES, POLAR REGIONS), (•WASTES(SANITARY  
ENGINEERING), DISPOSAL), LOGISTICS, CONSTRUCTION,  
MAINTENANCE, CIVIL ENGINEERING, DESIGN, OPERATION,  
SEWAGE, BAGS, TOILET FACILITIES (U)

LOW TEMPERATURE CONDITIONS INITIATE PHYSICAL,  
BIOLOGICAL, AND CHEMICAL CHANGES IN THE ENVIRONMENT.  
THESE, IN TURN, POSE SIGNIFICANT PROBLEMS IN THE  
DESIGN, CONSTRUCTION, AND OPERATION OF FACILITIES FOR  
THE DISTRIBUTION OF WATER AND FOR THE COLLECTION,  
TREATMENT, AND DISPOSAL OF WASTE. IN ADDITION,  
REMOTENESS IS A SIZEABLE PROBLEM IN THE SOUTH  
POLAR REGION. DISTANCE GREATLY SLOWS THE RATE  
AT WHICH MATERIAL CAN BE SUPPLIED FOR THE PURPOSES OF  
CONSTRUCTION, MAINTENANCE, AND REPAIR. AS A  
RESULT, LOGISTICS PROBLEMS ASSUME UNUSUALLY  
SIGNIFICANT PROPORTIONS. THE NEED FOR SIMPLE  
SYSTEMS IS PARAMOUNT. A SURVEY OF WATER SUPPLY AND  
WASTE DISPOSAL PROBLEMS AT EXISTING UNITED STATES  
STATIONS IN THE ANTARCTIC IS PRESENTED. PROBLEM  
AREAS ARE IDENTIFIED, AND POTENTIAL RESEARCH AND  
DEVELOPMENT EFFORTS ARE SUGGESTED. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 618 955

NATIONAL ACADEMY OF SCIENCES - NATIONAL RESEARCH COUNCIL  
WASHINGTON D C

REPORT OF THE PLANNING COMMITTEE ON EUTROPHICATION  
MAY 8-9, 1965.

(U)

65 10P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (WATER POLLUTION, CONTROL),  
WASTES(INDUSTRIAL), URBAN PLANNING, PUBLIC HEALTH,  
SEWAGE, WASTES(SANITARY ENGINEERING), MANAGEMENT  
PLANNING AND CONTROL, PUBLIC OPINION, BIOLOGICAL  
CONTAMINATION, LAKES, UNITED STATES GOVERNMENT  
IDENTIFIERS: EUTROPHICATION

(U)

(U)

EUTROPHICATION OF LAKES, STREAMS, AND ESTUARIES --  
THE PROBLEMS RESULTING FROM INTRODUCTION OF NUTRIENTS  
TO RECEIVING BODIES OF WATER -- IS THE SUBJECT  
DISCUSSED. THE PROBLEMS AND DANGERS ARISING FROM  
EUTROPHICATION OF LAKES AND OTHER BODIES OF WATERS  
AND THE RESULTING DIFFICULTIES ARE DESCRIBED.  
POPULATION AND INDUSTRIAL GROWTH, TOGETHER WITH  
INTENSIFIED AGRICULTURE, RIVER-BASIN DEVELOPMENT,  
RECREATIONAL USE OF PUBLIC WATERS, AND DOMESTIC AND  
INDUSTRIAL EXPLOITATION OF SHORE PROPERTIES ARE  
ENDANGERING THE NATION'S WATERS THROUGH ENRICHMENT.  
THIS ENRICHMENT OF WATERS CAUSES CHANGES AND/OR  
INCREASES IN ALGAE, AQUATIC VASCULAR PLANT GROWTH,  
FISH POPULATIONS, AND BOTTOM FAUNA. SUCH CHANGES  
USUALLY INTERFERE WITH THE MULTIPLE USES OF WATERS,  
REDUCE THEIR ESTHETIC QUALITIES AND ECONOMIC VALUE,  
AND BY ACCELERATING THE 'AGING' OF THE WATERS,  
THREATEN THE DESTRUCTION OF THIS RESOURCE. IT IS  
RECOMMENDED THAT THE GENERAL PUBLIC AND THE WHOLE  
SCIENTIFIC COMMUNITY BE ALERTED TO THE DETERIORATION  
OF THE QUALITY OF THE HUMAN ENVIRONMENT THROUGH THE  
EUTROPHICATION OF OUR WATER RESOURCES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 626 462 13/2 8/6  
ARCTIC INST OF NORTH AMERICA WASHINGTON D C

WATER SUPPLY AND SEWAGE DISPOSAL DEVELOPMENTS IN THE  
FAR NORTH, (U)

65 13P BOYD, WILLIAM L. BOYD,  
JOSEPHINE W. ;  
CONTRACT: NONR-1138(U) ,NONR-3996(OI)  
PROJ: NR-307-105

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN JOURNAL AMERICAN  
WATER WORKS ASSOCIATION V57 N7 P858-68 JUL 1965.  
COPIES TO DDC USERS ONLY.

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*ARCTIC REGIONS, SANITARY ENGINEERING),  
(\*WATER SUPPLIES, ARCTIC REGIONS), (\*SEWAGE, DISPOSAL),  
WASTES(SANITARY ENGINEERING), CONTAINERS, TOILET  
FACILITIES, PROCESSING, SEA WATER (U)

REPRINT: WATER SUPPLY AND SEWAGE DISPOSAL DEVELOPMENTS  
IN THE FAR NORTH.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 631 929 12/2 13/2 7/1  
NORTHWESTERN UNIV EVANSTON ILL TECHNOLOGICAL INST

CHANCE-CONSTRAINED GENERALIZED NETWORKS, (U)

MAR 66 15P CHARNES, ABRAHAM ; KIRBY,  
MICHAEL J. L. ; IRIKE, WILLIAM M. ;  
REPT. NO. SYSTEMS RESEARCH MEMO-149,  
CONTRACT: NONR-1228(10), DA-31-124-ARO(D)-322  
PROJ: NR-047-021,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*LINEAR PROGRAMMING, MANAGEMENT),  
(\*SANITARY ENGINEERING, MANAGEMENT), DESIGN, STOCHASTIC  
PROCESSES, CHEMICAL, SYSTEMS ENGINEERING (U)  
IDENTIFIERS: CHANCE CONSTRAINED PROGRAMMING (U)

AN EXTENSION TO THE THEORY OF LINEAR PROGRAMMING  
OVER GENERALIZED NETWORKS IS PRESENTED WHICH REPLACES  
THE GENERALIZED KIRCHOFF NODE CONDITIONS BY CHANCE  
CONSTRAINTS. THE EXTENSION IS MOTIVATED BY A CLASS  
OF PROBLEMS IN SANITARY AND CHEMICAL ENGINEERING IN  
WHICH THE NON-ZERO ENTRIES IN THE GENERALIZED  
INCIDENCE MATRIX MAY BE RANDOM VARIABLES. DUALITY  
RELATIONSHIPS ARE ESTABLISHED FOR APPROPRIATE PAIRS  
OF SUCH CHANCE-CONSTRAINED PROGRAMMING PROBLEMS BY  
SHOWING THAT THEIR DETERMINISTIC EQUIVALENTS CONSIST  
OF A DETERMINISTIC GENERALIZED NETWORK PROBLEM AND  
ITS DUAL. IT IS ALSO SHOWN HOW THESE DUALITY  
RELATIONSHIPS MAY BE EXPLOITED IN ORDER TO OBTAIN  
ACTUAL SOLUTIONS TO CHANCE-CONSTRAINED GENERALIZED  
NETWORK PROBLEMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 632 865 6/5 15/3 13/2 15/1  
RESEARCH TRIANGLE INST DURHAM N C OPERATIONS RESEARCH AND  
ECONOMICS DIV

ENVIRONMENTAL HEALTH PLANNING FOR POSTATTACK  
CONDITIONS: SOME PROBLEMS, PROGRAMS, AND  
PRIORITIES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
APR 66 80P SALMON, RAPHAEL J. ;  
REPT. NO. R-UU-197,  
CONTRACT: PH-86-65-10

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*MANAGEMENT PLANNING AND CONTROL, \*PUBLIC  
HEALTH), (\*PUBLIC HEALTH, NUCLEAR WARFARE), CIVIL  
DEFENSE, OPERATIONS RESEARCH, DISEASES, DISEASE,  
SURVIVAL(PERSONNEL), FOOD, HOUSING(DWELLINGS), WATER  
SUPPLIES, WASTES(SANITARY ENGINEERING), NUCLEAR  
WARFARE  
IDENTIFIERS: POSTATTACK OPERATIONS

(U)

(U)

CONDITIONS IMPOSED BY MASSIVE NUCLEAR ATTACK CAN BE  
EXPECTED TO DISRUPT NORMAL ENVIRONMENTAL HEALTH  
SERVICES OF COMMUNITIES THROUGHOUT THE UNITED  
STATES, AND TO THREATEN THE HEALTH OF SURVIVING  
POPULATION. THIS STUDY DEVELOPS A FRAMEWORK TO  
HELP DECISION-MAKERS EVALUATE POSTATTACK CONDITIONS  
RELATIVE TO ENVIRONMENTAL HEALTH. REVIEW AND  
ANALYSIS OF EXISTING INFORMATION ON PROBABLE  
POSTATTACK CONDITIONS AS THEY MIGHT AFFECT, AND BE  
AFFECTED BY, PERSONNEL OF LOCAL HEALTH DEPARTMENTS,  
PUBLIC HEALTH ORGANIZATION, AND RESOURCE MANAGEMENT  
PRACTICES IS PRESENTED. ANTICIPATED POSTATTACK  
ENVIRONMENTAL HEALTH PROBLEMS ARE IDENTIFIED, AND  
PRIORITY JUDGMENTS ARE MADE ON A COMPARATIVE BASIS IN  
TERMS OF LEVEL OF GRAVITY. RATIONALE SUPPORTING  
THE JUDGMENTS IS INCLUDED, AND BOTH ACTION AND  
RESEARCH PROGRAMS TO IMPROVE PREPAREDNESS ARE  
RECOMMENDED. IMPORTANT SOURCES OF DATA PRESCRIBED  
FOR THIS STUDY WERE THE REPORTS AND WORKING PAPERS OF  
AN EARLIER U. S. PUBLIC HEALTH SERVICE  
PROJECT. 'ENVIRONMENTAL HEALTH PROBLEMS IN  
THE POST SHELTER PERIOD'. IN ADDITION, FOUR  
CITY HEALTH DEPARTMENTS WERE VISITED TO ASSIST IN  
ANALYSIS OF NORMAL ENVIRONMENTAL HEALTH CONDITIONS  
RELATIVE TO THOSE EXPECTED IN A POSTATTACK RECOVERY  
PERIOD AND OF THE ABILITY OF A LOCAL HEALTH AGENCY TO  
COPE WITH PROJECTED CONDITIONS. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 635 281 13/2  
WYOMING UNIV LARAMIE

PHYSICAL AND CHEMICAL MEASUREMENTS OF WASTE WATER  
STABILIZATION LAGOONS DURING WINTER OPERATION. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS.  
MAY 66 92P NARUM, GAILEN O. ;  
CONTRACT: AF 33(606)-1295,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•WASTES(SANITARY ENGINEERING), DISPOSAL),  
(•SEWAGE, PROCESSING), COLD WEATHER TESTS, OXIDATION  
REDUCTION REACTIONS, PH FACTOR, OXYGEN, ATMOSPHERIC  
TEMPERATURE, SOLAR RADIATION (U)

OXIDATION-REDUCTION POTENTIAL, PH AND DISSOLVED  
OXYGEN CONTENT WERE MEASURED AT THE CITY WASTE  
STABILIZATION LAGOONS, LARAMIE, WYOMING, FROM  
NOVEMBER 17, 1965 UNTIL JANUARY 18, 1966.  
THESE MEASUREMENTS WERE CORRELATED WITH AIR AND  
WATER TEMPERATURES AND SOLAR RADIATION OF THE SAME  
PERIOD. TABULAR RESULTS ARE PRESENTED AND  
DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 640 831 13/2 8/8 6/3  
DELAWARE UNIV NEWARK MARINE LAB

SOME THOUGHTS ON WATER POLLUTION:

(U)

66 6P WILBER, CHARLES G. ;  
CONTRACT: AF-AFOSR-997-66;  
PROJ: AF-9777;  
TASK: 977701;  
MONITOR: AFOSR 66-0836

UNCLASSIFIED REPORT  
AVAILABILITY: PUBLISHED IN DELAWARE  
CONSERVATIONIST VOL 1966.  
SUPPLEMENTARY NOTE:

DESCRIPTORS: (•WATER POLLUTION, TOXICITY), FISHES,  
STRESS(PHYSIOLOGY), ATHEROSCLEROSIS, WASTES(INDUSTRIAL),  
PATHOLOGY, RIVERS (U)

TO SET THE BACKGROUND FOR STRESS RELATED  
ATHEROSCLEROSIS IN FISH A REVIEW OF WHAT POLLUTION  
DOES AS A STRESS FACTOR IN THE DELAWARE RIVER IS  
PRESENTED. IT IS POINTED OUT THAT POLLUTION,  
ESPECIALLY OF INDUSTRIAL ORIGIN, STRESSES FISH BY  
CAUSING PH CHANGES, LOWERING DISSOLVED OXYGEN,  
INCREASING TURBIDITY, CHANGING TEMPERATURE, CAUSING  
DIRECT TOXICITY, ETC. A PRIORI ONE THEN SUGGESTS  
THAT STRESS RESPONSES (E.G. ATHEROSCLEROSIS)  
WOULD BE FOUND IN A POPULATION OF FISH SO AFFECTED.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 643 204 675 1372  
RESEARCH TRIANGLE INST DURHAM N C OPERATIONS RESEARCH AND  
ECONOMICS DIV

STUDY TO DETERMINE REQUIREMENTS FOR PUBLIC HEALTH  
FACILITIES IN A POST-THERMONUCLEAR ATTACK  
ENVIRONMENT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 66 89P HALLAN, JEROME B. ;  
REPT. NO. RTI-R-00-264  
CONTRACT: FH-109-66-50

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PUBLIC HEALTH, CIVIL DEFENSE); (\*CIVIL  
DEFENSE, NUCLEAR WARFARE), STANDARDS, SEWAGE, DISPOSAL,  
PROCESSING, WATER, SOLIDS, GARBAGE (U)

THE STUDY DETERMINED REQUIREMENTS FOR ADEQUATE  
PUBLIC HEALTH FACILITIES AND OPERATIONS (WATER,  
SEWAGE AND SOLID WASTE) IN A POST-THERMONUCLEAR  
ATTACK ENVIRONMENT. FOUR CITIES WERE SURVEYED TO  
EVALUATE SOLID WASTE DISPOSAL TECHNIQUES AND TO  
DETERMINE SIMPLE TYPES OF EQUIPMENT AVAILABLE FOR  
EMERGENCY TREATMENT OF WATER AND SEWAGE. A  
QUESTIONNAIRE WAS SUBSEQUENTLY DEVELOPED TO ASCERTAIN  
THE KNOWLEDGE LEVEL AND PREPAREDNESS OF SOLID WASTE  
TREATMENT PERSONNEL TO COPE WITH DISASTER CONDITIONS.  
THIS QUESTIONNAIRE AND A SIMILAR ONE DEALING WITH  
WATER AND SEWAGE TREATMENT OPERATIONS (DEVELOPED  
UNDER A PREVIOUS CONTRACT) WERE THEN ADMINISTERED  
TO THE FOUR CITIES. FINDINGS FROM BOTH  
QUESTIONNAIRES ARE SUMMARIZED AND EVALUATED.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 645 599 / 6/18 13/2  
ENGINEERING-SCIENCE INC ARCADIA CALIF

POSTATTACK SANITATION, WASTE DISPOSAL, PEST AND  
VECTOR CONTROL AND THE EFFECTS OF FALLOUT IN WASTE  
WATER AND SEWER SYSTEMS. (U)

DESCRIPTIVE NOTE: FINAL REPT., PHASE 2,  
JAN 67 99P HARMON, JUDSON A. ; LEACH,  
JOHN M. ;  
CONTRACT: N228(62479)68147  
MONITOR: USNRDL TRC-79

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-611 769.

DESCRIPTORS: (\*HEALTH PHYSICS, \*SANITARY ENGINEERING),  
(\*WASTES(SANITARY ENGINEERING), DISPOSAL), (\*FALLOUT,  
DISPOSAL), (\*DISEASE VECTORS, CONTROL), (\*PEST CONTROL,  
PUBLIC HEALTH), NUCLEAR EXPLOSION DAMAGE, DRAINAGE,  
SEDIMENTATION, INFECTIOUS DISEASES, CIVIL DEFENSE (U)

THE STUDY PRESENTS INFORMATION ON THE MAGNITUDE,  
CHARACTER, AND TIMING OF POSTATTACK SANITATION  
OPERATIONS FOR THE SAN JOSE METROPOLITAN AREA  
OF CALIFORNIA AND ASSESSES THE EFFECTIVENESS OF  
THESE OVERALL OPERATIONS ON MAINTAINING DISEASE  
INCIDENCE AT LEVELS WHICH WILL NOT BE DETRIMENTAL TO  
POSTATTACK RECOVERY. IT ALSO PRESENTS INFORMATION  
ON THE SEDIMENTARY EFFECTS OF FALLOUT WASHED INTO  
DRAINAGE SYSTEMS INCLUDING: (1) A METHOD TO  
DETERMINE THE EFFECTS; AND (2) THE SECTIONS OF  
THE SYSTEMS WHICH ARE MOST LIKELY TO EXPERIENCE  
SEDIMENT BUILD-UP. THE RESULTS OF THE ANALYSIS OF  
THE POSTATTACK SANITATION OPERATIONS IN THE STUDY  
AREA INDICATE APPROXIMATELY 60 PERCENT OF THE WASTE  
COLLECTION VEHICLES WILL BE DAMAGED, BUT DUE TO  
INCREASED USE OF THE SURVIVING VEHICLES AND THE  
POSTATTACK REDUCTION OF HOUSEHOLD REFUSE PRODUCTION,  
NO DETRIMENTAL EFFECT ON THE OVERALL POSTATTACK  
RECOVERY OF THE AREA IS EXPECTED. THE STUDY OF  
FALLOUT TRANSPORT IN DRAINAGE SYSTEMS INDICATES THAT  
SEDIMENT BUILD-UP WILL OCCUR WHEN THE FLOW RATE PER  
UNIT OF WIDTH IS DECREASED, AS IN THE CASE OF WATER  
EXITING FROM A CATCH BASIN CONNECTOR PIPE INTO A MAIN  
LINE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 645 601 13/2 6/9  
NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF

VIRUSES IN POLAR SANITATION, A LITERATURE  
REVIEW.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
DEC 66 19P LEGRUS, P. G. ; DROBNY, N. L. ;  
REPT. NO. NCEL-TR-505  
PROJ: Y-FO15-11-01-212

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, POLAR REGIONS),  
(\*VIRUSES, POLAR REGIONS), (\*WASTES(SANITARY  
ENGINEERING), VIRUSES), ANTARCTIC REGIONS,  
ENTEROBACTERIACEAE, ENTEROVIRUSES, HYGIENE, TOILET  
FACILITIES, INCINERATORS, CHLORINATION, HAZARDS, WATER  
POLLUTION, SEWAGE, REVIEWS (U)  
IDENTIFIERS: FECES (U)

THE LITERATURE WAS REVIEWED TO COLLECT INFORMATION  
ON WHICH TO BASE AN ESTIMATE OF THE THREAT TO THE  
HEALTH OF POLAR CAMP PERSONNEL POSED BY VIRUSES IN  
HUMAN WASTE. THE NATURE OF VIRUSES IN GENERAL IS  
OUTLINED AND THE OCCURRENCE OF ENTEROVIRUS INFECTIONS  
IS DISCUSSED. IT IS CONCLUDED (1) THAT THE  
UNCONTROLLED WASTE DISPOSAL PRACTICES CHARACTERISTIC  
OF POLAR CAMPS MAKE THESE AREAS PRIME TARGETS FOR THE  
SPREAD OF VIRUS DISEASES, AND (2) THAT THE  
EXISTING HAZARDS COULD BE SIGNIFICANTLY REDUCED BY  
(A) THE USE OF CHEMICAL TOILETS, (B) WASTE  
INCINERATION, AND (C) SUPERCHLORINATION OF  
DRINKING WATER FOLLOWED BY DECHLORINATION PRIOR TO  
CONSUMPTION. IT IS RECOMMENDED THAT (1) AN  
INVESTIGATION OF THE SURVIVAL OF ENTEROVIRUSES IN THE  
POLAR ENVIRONMENT BE CONDUCTED, AND (2) CHEMICAL  
OR INCINERATING WASTE-TREATMENT PROCESS BE USED FOR  
HUMAN WASTE DISPOSAL IN POLAR AREAS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 648 122 6/5 6/9  
ARMY BIOLOGICAL LABS FREDERICK MD

HYGIENIC EDUCATION OF THE POPULATION IN THE  
PROPHYLAXIS OF INFECTIOUS DISEASES;

(U)

JAN 66 7P SOKOLOV, I. S. ;  
REPT. NO. TRANS-1737  
MONITOR: TT 67-61217

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF ZHURNAL MIKROBIOLOGII,  
EPIDEMIOLOGII I IMMUNOBIOLOGII (USSR) V42 N6 P3-6  
1965.

DESCRIPTORS: (\*PUBLIC HEALTH, HYGIENE), EPIDEMIOLOGY,  
MEDICINE, POPULATION, INFECTIOUS DISEASES, EDUCATION,  
SANITARY ENGINEERING, WATER SUPPLIES, USSR (U)

THE HYGIENIC EDUCATION OF THE POPULATION ON THE  
PREVENTION OF INTESTINAL INFECTIONS INCLUDES  
EXPLANATORY WORK DURING THE PROCESS OF INVESTIGATING  
AN EPIDEMIC FOCUS AND THE CARRYING OUT OF MEASURES  
WHICH PREVENT THE SUBSEQUENT DISEASES; HYGIENIC  
EDUCATION OF RECONVALESCENTS DURING THEIR STAY IN THE  
HOSPITAL; PROPAGANDA IN SMALL SECTORS AND IN EPIDEMIC  
FOCI DURING THE PROCESS OF THE DISPENSARY TREATMENT  
OF CHRONIC PATIENTS AND BACTERIA CARRIERS;  
EPIDEMIOLOGICAL TRAINING OF ACTIVE SANITATION WORKERS  
AND THOSE WORKERS BY WHOSE WORK AND BY WHOSE STANDARD  
OF SANITATION EDUCATION THERE IS A DIRECT REFLECTION  
ON THE STATUS OF INTESTINAL INFECTIONS IN THE  
POPULATION; THE WIDE ATTRACTION OF THE POPULATION TO  
ACTIVE PARTICIPATION IN THE WORK ON THE GOOD SANITARY  
ORGANIZATION OF POPULATED PLACES AND THE SANITARY  
PROTECTION OF THE SOIL AND SOURCES OF WATER SUPPLY.  
THESE CONSIDERATIONS WILL ENSURE AN INCREASE IN THE  
EFFECTIVENESS OF HYGIENIC EDUCATION OF THE POPULATION  
FOR THE PURPOSE OF COMBATTING INFECTIOUS DISEASES,  
PARTICULARLY INTESTINAL INFECTIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 648 227 11/11  
NAVAL AIR ENGINEERING CENTER PHILADELPHIA PA AERONAUTICAL  
MATERIALS LAB

CRESOL-FREE GREASE REMOVERS,

(U)

SEP 66 7P MATUSKA, S. A. ;  
REPT. NO. NAEC-AML-2511

UNCLASSIFIED REPORT

DESCRIPTORS: (•CLEANING COMPOUNDS, PREPARATION),  
GREASES, REMOVAL, PHENOLS, WASTES(INDUSTRIAL), DISPOSAL,  
EFFECTIVENESS, SPECIFICATIONS (U)

AN INVESTIGATION WAS CONDUCTED TO ELIMINATE THE USE  
OF PHENOL AND/OR CRESOL AS INGREDIENTS IN CLEANING  
COMPOUNDS EMPLOYED BY FIELD ACTIVITIES FOR AIRCRAFT  
MAINTENANCE AND OVERHAUL OPERATIONS. THIS ACTION  
WAS CONSIDERED NECESSARY IN ORDER TO PREVENT PROBLEMS  
ARISING FROM THE DISPOSAL OF WASTE MATERIALS. FROM  
THE RESULTS OBTAINED, IT IS CONCLUDED THAT CRESOL-  
FREE MATERIAL, TYPE I SPECIFICATION P-C-444  
OR SPECIFICATION MIL-C-22543, CAN BE USED TO  
PREPARE SOLUTIONS FOR USE IN HEAVY-DUTY GREASE  
CLEANING OPERATIONS WHICH WILL ELIMINATE THE USE OF  
THE PHENOLIC TYPE II SPECIFICATION P-C-444  
GREASE REMOVER. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMU9

AD- 648 242 13/10 13/2  
DURR-OLIVER INC STAMFORD CONN.

FEASIBILITY OF USING THE GORATOR PUMP TO DISPOSE OF  
GALLEY WASTE. (U)

JUN 66 11P  
PROJ: S-FU13-08-10  
TASK: 2709  
MONITOR: MEL 37/67

UNCLASSIFIED REPORT

DESCRIPTORS: (WASTES(SANITARY ENGINEERING),  
SUBMARINES), KITCHENS, DISPOSAL, FEASIBILITY STUDIES,  
PUMPS (U)

WASTE MATERIALS, TYPICAL OF SHIPBOARD REFUSE, WERE  
REDUCED USING A GORATOR PUMP. THE RESULTANT  
PRODUCTS WERE LESS THAN 1/4 INCH. (AUTHOR) (U)



UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 650 937 6/5 6/13  
NAVAL MEDICAL RESEARCH UNIT NO 4 GREAT LAKES ILL

EFFECT OF SEWAGE TREATMENT ON RECOVERY OF POLIOVIRUS  
FOLLOWING MASS ORAL IMMUNIZATION, (U)

FEB 67 9P THEIOS, E. P. ; MORRIS, J.  
G. ; ROSENBAUM, M. J. ; BAKER, A. G. ;  
REPT. NO. RU-67.7  
MONITOR: NAVMED MF-022.03.07-4016

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN AMERICAN JOURNAL OF  
PUBLIC HEALTH V57 N2 P295-300 FEB 1967.  
SUPPLEMENTARY NOTE: PRESENTED AT THE ANNUAL MEETING OF  
THE AMERICAN PUBLIC HEALTH ASSOCIATION (93RD),  
CHICAGO, ILL., 21 OCT 65.

DESCRIPTORS: (\*SEWAGE, \*POLIOMYELITIS VIRUS), RECOVERY,  
EXCRETION, VACCINES, IMMUNITY, PUBLIC HEALTH,  
CHLORINATION (U)

ACTIVATED SLUDGE SEWAGE TREATMENT PROCESS WAS FOUND  
TO BE FAR SUPERIOR TO TRICKLING FILTRATION FOR  
REMOVAL OF TRIVALENT ORAL POLIOVIRUSES. EXCRETION  
OF SUCH VIRUSES WAS OBSERVED TO CONTINUE FOR AT LEAST  
56 DAYS AFTER VACCINATION. CONSIDERABLE VARIATION  
IN RECOVERY OF VIRUS TYPES I AND II WAS  
OBSERVED IN THE TWO DIFFERENT POPULATIONS.  
CHLORINATION DID NOT ELIMINATE VIRUS RECOVERY.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 651 743 13/2 7/1  
NATIONAL RESEARCH COUNCIL OF CANADA OTTAWA (ONTARIO) DIV OF  
APPLIED CHEMISTRY

THE REVERSE OSMOSIS MEMBRANE SEPARATION TECHNIQUE FOR  
WATER POLLUTION CONTROL, (U)

AUG 66 3P IRONSIDE, R. ISOURIRAJAN, S. ;  
MONITOR: NRC 9422

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN WATER RESEARCH VI  
P179-80 1967.

DESCRIPTORS: (•WATER POLLUTION, CONTROL), (•SEWAGE,  
PURIFICATION), OSMOSIS, SEPARATION, MEMBRANES,  
WASTES(SANITARY ENGINEERING), CLEANING COMPOUNDS,  
WASTES(INDUSTRIAL) (U)  
IDENTIFIERS: BENZENESULFONATE COMPOUNDS, MAGNESIUM  
PERCHLORATE, DENSITY, OPTICAL PROPERTIES, REVERSE  
OSMOSIS (U)

THE FOLLOWING FEED SAMPLES WERE INVESTIGATED:  
(1) TWO SAMPLES OF EFFLUENT SEWAGE WATER OBTAINED  
FROM THE OTTAWA CITY PRIMARY TREATMENT PLANT,  
(2) TWO SAMPLES OF WATER CONTAINING 370 PPM AND  
512 PPM RESPECTIVELY OF THE ANIONIC SURFACE ACTIVE  
AGENTS SODIUM DIOCTYL SULPHOSUCCINATE (AEROSOL UT)  
AND SODIUM ALKYL BENZENE SULPHONATE (NACCONOL  
NNSF) WHICH IS THE ACTIVE INGREDIENT OF MOST  
COMMERCIAL SYNTHETIC DETERGENTS, AND (3) A SAMPLE  
OF BROWN LIGNIN SOLUTION SUPPLIED BY LIGNOSOL  
CHEMICAL COMPANY. THE FEED AND PRODUCT  
SOLUTIONS WERE ANALYSED FOR THE CONCENTRATIONS OF THE  
RESPECTIVE WATER POLLUTING INGREDIENTS. THE  
COLIFORM ORGANISMS IN THE SEWAGE WATER WERE  
DETERMINED BY THE STANDARD METHODS OF ANALYSIS  
(STANDARD METHODS, 1966). THE CONCENTRATION OF  
THE SURFACE ACTIVE AGENT WAS DETERMINED WITHIN PLUS  
OR MINUS 0.2 PPM BY FORMING THE METHYLENE BLUE  
COMPLEX, EXTRACTING IT WITH CHLOROFORM AND OBSERVING  
THE OPTICAL DENSITY OF THE SOLUTION ON A  
SPECTROPHOTOMETER, LONGWELL AND MANIECE (1955).  
THE LIGNIN SOLUTION WAS ANALYSED FOR ITS SOLID  
CONTENT BY JUST DRYING THE SAMPLE AT 105C TO  
CONSTANT WEIGHT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 654 306 22/2 13/2 6/11  
GENERAL DYNAMICS CORP GROTON CONN ELECTRIC BOAT DIV

RESEARCH AND DEVELOPMENT OF A WASTE MANAGEMENT UNIT  
FOR A MANNED SPACE VEHICLE. (U)

DESCRIPTIVE NOTE: FINAL REPT., 1 DEC 65-15 FEB 67,  
APR 67 27p DODSON, JOHN L. WALLMAN,

HAROLD ;

REPT. NO. U413-66-145  
CONTRACT: AF 33(615)-3340  
PROJ: AF-6373  
TASK: 637305  
MONITOR: AMRL TR-67-2

UNCLASSIFIED REPORT

DESCRIPTORS: (MANNED SPACECRAFT, WASTES(SANITARY  
ENGINEERING)), SPACECRAFT COMPONENTS, CLOSED ECOLOGICAL  
SYSTEMS, SPACECRAFT CABINS, URINE, LIFE SUPPORT,  
STORAGE, HYGIENE, SANITARY ENGINEERING (U)

A WASTE MANAGEMENT UNIT (LABORATORY MODEL) FOR  
USE IN A SPACE SIMULATOR WAS DESIGNED, FABRICATED,  
AND TESTED. THE UNIT WAS DESIGNED TO: SUPPORT  
4 MEN FOR 30 DAYS. OPERATE FOR FIVE 30-DAY  
SIMULATED MISSIONS. OPERATE UNDER WEIGHTLESS OR  
NORMAL GRAVITY CONDITIONS. COLLECT URINE AND FECES  
SEPARATELY BUT SIMULTANEOUSLY WHILE THE USER IS IN  
THE SEATED POSITION. COLLECT URINE WHEN THE USER  
IS IN THE STANDING POSITION. THE UNIT INCORPORATES  
A SINGLE SPHERE TO COLLECT, DEHYDRATE, AND STORE  
FECES. THIS PRECLUDES THE NECESSITY OF MANUAL  
TRANSFER OF WASTE. POSITIVE ODOR CONTROL IS  
ACHIEVED WITH A FORCED AIR FLOW. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 656 311 6/11  
AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB  
OHIO

INTEGRATED LIFE SUPPORT SYSTEM STUDY (20-DAY  
EVALUATION PROGRAM). (U)

DESCRIPTIVE NOTE: FINAL REPT. APR-DEC 65,  
DEC 66 76P METZGER, COURTNEY A. ;FRITZ,  
EUGENE ;  
REPT. NO. AMRL-TR-66-185  
PROJ: AF-6373

UNCLASSIFIED REPORT

DESCRIPTORS: (\*LIFE SUPPORT, PERFORMANCE(ENGINEERING)),  
MAN MACHINE SYSTEMS, MAINTENANCE, RESPIRATION, PRESSURE  
SUITS, AEROSPACE MEDICINE, WATER, RECOVERY, HYGIENE,  
WASTES(SANITARY ENGINEERING), NUTRITION,  
INSTRUMENTATION, STRENGTH(PHYSIOLOGY), SPACECRAFT  
CABINS, CLOSED ECOLOGICAL SYSTEMS, MUSCLES, SPACE  
SIMULATION CHAMBERS (U)

TESTS WERE CONDUCTED TO DEFINE THE VARIOUS PROBLEMS  
INVOLVED IN THE MAINTENANCE OF AN ACCEPTABLE  
ENVIRONMENT, THE NUMBER OF VARIABLES CONCERNED WITH  
THE MAN-MACHINE CONCEPT, THE OPERATION, MAINTENANCE  
AND EVALUATION OF SINGLE UNITS AND INTEGRATED SYSTEMS  
FOR THE SUPPORT OF LIFE IN A SIMULATED AEROSPACE  
MISSION. THE INVESTIGATION COVERED PRIMARY  
PROBLEMS AND BENEFITS ASSOCIATED WITH WATER RECOVERY,  
PERSONAL HYGIENE, SANITATION, NUTRITION,  
INSTRUMENTATION, ATMOSPHERIC CONDITIONS AT VARIOUS  
PRESSURES AND MIXTURES, CLOTHING, CREW  
ACCOMMODATIONS, WASTE MANAGEMENT AND MUSCLE-STRENGTH  
WHILE CONFINED IN A CHAMBER SIMULATING AN AEROSPACE  
VEHICLE, AND THE FACILITIES AND SUPPORT REQUIRED TO  
TEST AND EVALUATE LIFE SUPPORT SYSTEMS.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 656 773 6/8 6/6  
DEPARTMENT OF THE AIR FORCE NEW YORK 09224 TUSLOG  
DETACHMENT 36 (USAFE)

ENVIRONMENTAL FACTORS AND SANITATION OF SHELL EGGS  
WITH EMPHASIS ON THE MIDDLE EAST SITUATION. (U)

DESCRIPTIVE NOTE: PROFESSIONAL REPT.,  
FEB 67 24p JUNI, ROBERT P. ;  
REPT. NO. DET-36-67-1  
PROJ: 65-7

UNCLASSIFIED REPORT

DESCRIPTORS: (EGGS, BIOLOGICAL CONTAMINATION),  
SALMONELLA, DISEASES, FOOD, SANITARY ENGINEERING,  
HYGIENE, HUMANS, EPIDEMIOLOGY, INFECTIOUS DISEASES,  
QUALITY CONTROL, MIDDLE EAST, PROCUREMENT, MILITARY  
REQUIREMENTS (U)

THE MECHANISMS BY WHICH SHELL EGGS CAN BECOME  
INFECTED AND TRANSMIT ENTERIC DISEASE TO HUMANS ARE  
REVIEWED. SOME DATA ARE PRESENTED WHICH SHOW THE  
ENVIRONMENTAL CONDITIONS IN THE MIDDLE EAST WHICH  
CAUSE CONTAMINATION OF SHELL EGG CONTENTS ALONG WITH  
RESULTS OF SOME BACTERIOLOGICAL EXAMINATIONS.  
PROBLEMS OF SANITATION ARE IDENTIFIED WITH THE  
EXPANSION OF CONSUMER MARKETS WITHOUT A CORRESPONDING  
ADVANCEMENT IN THE INDUSTRIAL AND SOCIOLOGICAL BASE.  
THE SANITATION OF EGG-WASHING IS DISCUSSED IN SOME  
DETAIL. A PROGRAM IS SUGGESTED FOR U. S.  
FORCES TO OBTAIN A REASONABLY SANITARY PRODUCT IN  
AREAS WITH PRIMITIVE EGG-MARKETING PRACTICES.  
BACTERIOLOGICAL RESULTS SUPPORT THE CONCLUSION THAT  
SHELL EGGS COMING THROUGH THE COMMON MARKETING  
CHANNELS HAVE GREATER CONTAMINATION THAN THOSE  
OBTAINED DIRECTLY FROM THE FARM. A QUALITY CONTROL  
PROGRAM AND SANITARY GUIDE IS APPENDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 658 302 6/13 8/8 13/2  
ARCTIC INST OF NORTH AMERICA WASHINGTON D C

MICROBIOLOGICAL STUDIES OF AQUATIC HABITATS OF THE  
AREA OF INUVIK, NORTHWEST TERRITORIES. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
67 17P BOYD, WILLIAM L. ; BOYD,  
JOSEPHINE W. ;  
CONTRACT: NONR-3996(U1)  
PROJ: NR-307-105

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN ARCTIC V20 P27-41  
1967.

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
COLORADO STATE UNIV., FORT COLLINS.

DESCRIPTORS: (\*MICROBIOLOGY, ARCTIC REGIONS), LAKES,  
RIVERS, DISTRIBUTION, MICROORGANISMS, WATER SUPPLIES,  
URBAN AREAS, WASTES(SANITARY ENGINEERING) (U)

CHEMICAL AND MICROBIOLOGICAL STUDIES WERE CARRIED  
OUT ON LAKES, PONDS, AND THE MACKENZIE RIVER IN  
THE VICINITY OF INUVIK. WITH A FEW EXCEPTIONS  
THE CHEMICAL COMPOSITION OF MOST OF THE BODIES OF  
WATER WAS UNIFORM THROUGHOUT THE ICE-FREE PERIOD.  
THE NUMBER OF PSYCHROPHILIC AND MESOPHILIC BACTERIA  
INCREASED IN ALL CASES BUT NOT NECESSARILY AT THE  
SAME TIME; THE COUNTS OF THERMOPHILIC BACTERIA AND  
MOLDS WERE LOW. ANCILLARY STUDIES WERE ALSO  
CARRIED OUT ON RUNOFF WATER AND THE TOWN'S WATER  
DISTRIBUTION AND SEWAGE DISPOSAL SYSTEMS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 658 898 15/3 5/1 5/9  
OFFICE OF CIVIL DEFENSE WASHINGTON D C

SHELTER MANAGEMENT TEXTBOOK.

(U)

JUL 67 121P  
REPT. NO. SM-161

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FALLOUT SHELTERS, \*MANAGEMENT  
ENGINEERING), (\*CIVIL DEFENSE, TRAINING), TEXTBOOKS,  
RADIOBIOLOGY, WEAPONS, SOCIOLOGY, POPULATION,  
ATMOSPHERES, TEMPERATURE CONTROL, WATER, SAFETY, FOOD,  
SLEEP, SANITARY ENGINEERING, MEDICINE, ILLUMINATION,  
POWER, COMMUNICATION SYSTEMS, TRAINING, PSYCHOLOGY,  
RELIGION, RECREATION (U)

CONTENTS: OVERVIEW OF SHELTER MANAGEMENT;  
RADIOLOGICAL PROTECTION; OTHER WEAPON EFFECTS;  
PRE-OCCUPANCY MANAGEMENT RESPONSIBILITIES;  
ORGANIZING THE SHELTER POPULATION; ORGANIZING  
SHELTER RESOURCES; ORGANIZING ACTIVITIES AND  
PATTERNS OF LIVING; ATMOSPHERE AND TEMPERATURE  
CONTROL; WATER; SAFETY; FOOD; SLEEP;  
SANITATION; MEDICAL CARE; ILLUMINATION AND  
POWER; COMMUNICATION; TRAINING; PSYCHOLOGICAL  
SUPPORT; RELIGIOUS, RECREATIONAL, AND SERVICE  
ACTIVITIES; POST-OCCUPANCY MANAGEMENT  
RESPONSIBILITIES. (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 659 310 6/3 13/2  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PHYTOPLANKTON AS AN AGENT OF THE SELF-PURIFICATION OF  
CONTAMINATED WATERS, (U)

AUG 67 43P VINBERG, G. G. ;SIVKO, T.  
N. 1  
REPT. NO. FTD-MT-66-13  
MONITOR: TT 67-62992

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: FIOTOPLANKTON KAK AGENT  
SAMOOCHISHCHENIYA ZAGRYAZNENNYKH VOD, EDITED MACHINE  
TRANS. OF VSESOYUZNOE GIDROBIOLOGICHESKOE OBSHCHESTVO.  
TRUDY (USSR), V7 P3-23 1956.

DESCRIPTORS: (•PLANKTON, WATER POLLUTION),  
CONTAMINATION, SEWAGE, ALGAE, CHLOROPHYLLS, OXYGEN,  
PHOTOSYNTHESIS, EFFECTIVENESS, PURIFICATION, USSR (U)

PLANKTONIC ALGAE WHEN GROWN ON A LARGE SCALE ON  
UNDILUTED CITY SEWAGE SHARPLY ACCELERATE THE PROCESS  
OF SELF-PURIFICATION; THIS IS EXPRESSED IN FASTER  
INITIAL LOWERING OF THE BOR, EARLY TERMINATION OF  
THE ANAEROBIC PHASE, THE APPEARANCE OF FREE OXYGEN,  
AND IN THE ACCELERATED ONSET OF NITRIFICATION. THE  
ACCUMULATION OF A LARGE QUANTITY OF ORGANIC  
SUBSTANCES SYNTHESIZED BY THE ALGAE IN THE  
COMPOSITION OF THE BODIES OF THE LIVING CELLS IS NOT  
REFLECTED IN THE MAGNITUDE OF THE BOR. WITH THE  
LARGE-SCALE DEVELOPMENT OF GREEN ALGAE IN SELF-  
CLEANING SEWAGE THE DEATH RATE OF COLIFORM BACTERIUM  
IS SHARPLY INCREASED. THE CONSTRUCTION OF PONDS  
FILLED WITH UNDILUTED SEWAGE IS THE SIMPLEST WAY TO  
USE GREEN ORGANISMS AS AGENTS OF SELF-PURIFICATION;  
IT DRAWS ATTENTION ALSO AS AN EFFECTIVE METHOD OF  
PURIFICATION, ESPECIALLY APPLICABLE IN REGIONS WITH  
WARM DRY CLIMATES. FURTHER STUDY OF THE CONDITIONS  
FAVORABLE TO THE DEVELOPMENT OF PHOTOSYNTHESIZING  
PLANKTONIC ORGANISMS WILL ALLOW SETTING UP PROBLEMS  
IN THE LARGE-SCALE CULTIVATION OF ALGAE AS ONE OF  
METHODS OF UTILIZING SEWAGE. IN PARTICULAR ONE  
SHOULD CLARIFY THE POSSIBILITY OF USING ALGAE GROWN  
ON SEWAGE TO INCREASE OF THE PRODUCTIVITY OF  
PISCICULTURAL PONDS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 659 512 13/2

BUREAU OF MEDICINE AND SURGERY WASHINGTON D C

MANUAL OF NAVAL PREVENTIVE MEDICINE. CHAPTER 5.  
WATER SUPPLY ASHORE.

(U)

AUG 63 SSP

REPT. NO. NAVMED P-5010-5

UNCLASSIFIED REPORT

DESCRIPTORS: (•WATER SUPPLIES, •NAVAL SHORE FACILITIES),  
WATER, PURIFICATION, SANITARY ENGINEERING, CHLORINE,  
RAIN, SEA WATER, DEW, SNOW, SOURCES, RECREATION, URBAN  
AREAS, ANALYSIS, STANDARDS, WATER POLLUTION, WATER  
TANKS, CHLORINATION, MICROORGANISMS

(U)

CONTENTS: WATER SUPPLIES; WATER SOURCES;  
WATER FROM MUNICIPAL SOURCES; ANALYSES AND  
STANDARDS; DISINFECTION OF MAINS, TANKS, AND  
TREATMENT UNITS; WATER PURIFICATION.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 661 620 7/1 11/12 13/2  
SVENSKA TRAFORSKNINGSINSTITUTET STOCKHOLM

IDENTIFICATION OF VOLATILE COMPOUNDS IN KRAFT MILL  
EMISSIONS. (U)

APR 67 SP BETHGE, OLOF IEHRENBORG, LALLA  
;  
REPT. NO. MEDDELANDE-509

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN SVENSK PAPPERSTIDNING  
V70 N10 P347-50 1967.

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH SWEDISH  
FOREST PRODUCTS RESEARCH LAB., STOCKHOLM, AND  
SWEDISH WATER AND AIR POLLUTION RESEARCH LAB.,  
STOCKHOLM.

DESCRIPTORS: (\*WASTES(INDUSTRIAL), CHEMICAL ANALYSIS),  
(\*WOOD PULP, WASTES(INDUSTRIAL)), VAPORS, ODORS, WASTE  
GASES, GAS CHROMATOGRAPHY, MASS SPECTROSCOPY, TERPENES,  
SWEDEN (U)

WITH THE OBJECT OF IDENTIFYING COMPOUNDS  
CONTRIBUTING TO THE ODOUR FROM KRAFT MILLS, RELIEF,  
BLOW GASES AND RAW TURPENTINE FROM SUCH A MILL HAVE  
BEEN SUBMITTED TO QUALITATIVE ANALYSIS. THE  
METHODS OF GAS CHROMATOGRAPHY, IN SOME CASES IN  
COMBINATION WITH MASS SPECTROMETRY, WERE USED.  
ATTENTION WAS CENTERED ON THE MOST VOLATILE  
COMPOUNDS AND, BESIDES A NUMBER OF TERPENES, 25  
COMPOUNDS WERE IDENTIFIED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 663 207 6/5  
NAVAL MEDICAL SCHOOL BETHESDA MD TRANSLATION SERVICE

SCHISTOSOMATOSIS (BILHARZIOSIS) IN MILITARY  
PATHOLOGY;

(U)

NOV 67 8P PEKSHEV, A. P. ;  
REPT. NO. NMS-TRANS-1223

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF VOENNO-MEDITSINSKII  
ZHURNAL (USSR) N7 P55-7 1965.

DESCRIPTORS: (\*SCHISTOSOMA, DISEASES), PATHOLOGY, LIFE  
CYCLES, MILITARY MEDICINE, HYGIENE, CHEMOTHERAPY,  
SANITARY ENGINEERING, PUBLIC HEALTH, USSR (U)

THE FOLLOWING PRACTICAL APPLICATIONS OF PROPHYLAXIS  
AND LIQUIDATION OF SCHISTOSOMATOSIS ARE SUGGESTED:  
(1) DESTRUCTION OF ADULT FORMS OF THE  
SCHISTOSOMAE; (2) ELIMINATION OF THE MOLLUSKS -  
THE INTERMEDIATE HOSTS OF THE SCHISTOSOMAE; (3)  
THE COMMUNITY WELFARE (WELFARE OF THE POPULATED  
POINTS, CENTRAL WATER SUPPLY, CANALIZATION AND  
SANITATION OF THE SEWAGES); (4) THE  
ELIMINATION OF CONTACT WITH INFLECTED WATER; AND  
(5) THE CONTINUED, PERSISTENT, PLANNED SANITARY  
AND EDUCATIONAL PROPAGANDA. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 864 171 13/4 13/2 13/13  
GENERAL AMERICAN TRANSPORTATION CORP NILES ILL GENERAL  
AMERICAN RESEARCH DIV

DUAL-PURPOSE WATER CONTAINER.

(U)

DESCRIPTIVE NOTE: FINAL REPT. APR 66-JUN 67,  
JUN 67 74P KAPIL, A. L. ;  
REPT. NO. GARD-1404-F  
PROJ: 14338

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY OFFICE  
OF CIVIL DEFENSE, WASHINGTON, D. C. PREPARED IN  
COOPERATION WITH STANFORD RESEARCH INST., MENLO  
PARK, CALIF.

DESCRIPTORS: (\*WATER TANKS, DESIGN), (\*WATER SUPPLIES,  
FALLOUT SHELTERS), (\*TOILET FACILITIES, CONTAINERS),  
STORAGE TANKS, POLYETHYLENE PLASTICS, CIVIL DEFENSE,  
LIFE EXPECTANCY, MECHANICAL PROPERTIES, WASTES(SANITARY  
ENGINEERING) (U)

A 14-GALLON, DUAL-PURPOSE POLYETHYLENE CONTAINER  
WAS DEVELOPED FOR STORING WATER IN FALLOUT SHELTERS.  
AFTER THE WATER IS CONSUMED, THE CONTAINER CAN BE  
CONVERTED INTO A COMMODE. TESTS ON PROTOTYPE  
CONTAINERS SHOW THE DESIGN TO BE SATISFACTORY.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 664 601 6/11  
IONICS INC WATERTOWN MASS

A SYSTEM TO ANALYZE WATER FOR POTABILITY.

(U)

DESCRIPTIVE NOTE: FINAL REPT. APR 65-FEB 67,  
SEP 67 2YP EISENMANN, JOHN L. ; GRAFF,  
ALAN S. ; POTTER, ROBERT M. ;  
CONTRACT: AF 33(615)-2877  
PROJ: AF-6373  
TASK: 637304  
MONITOR: AMRL TR-67-123

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER SUPPLIES, ANALYSIS), (\*LIFE  
SUPPORT, WATER SUPPLIES), CLOSED ECOLOGICAL SYSTEMS,  
WASTES (SANITARY ENGINEERING), FUEL CELLS, ELECTROLYTIC  
CELLS, ELECTRODES, DETECTORS, MEASURING INSTRUMENTS (U)

METHODS WERE DEVELOPED BY WHICH AN ASTRONAUT WILL  
BE ABLE, DURING AN AEROSPACE MISSION, TO ANALYZE  
WATER RECLAIMED FROM URINE, FUEL CELLS AND  
DEHUMIDIFICATION WATER, TO DETERMINE IF THE WATER  
CONFORMS TO CERTAIN STANDARDS. THIS WAS  
ACCOMPLISHED BY THE USE OF SPECIFIC-ION ELECTRODES  
AND SPECIAL CONDUCTIVITY CELLS USING STANDARD PH  
AND REFERENCE ELECTRODES. UNIQUE MANIFOLDING AND  
CIRCUITRY WERE DESIGNED AND INTEGRATED WITH THE  
SENSORS. ALL SYSTEM COMPONENTS WERE HOUSED IN A  
LIGHTWEIGHT PORTABLE INSTRUMENT CASE WITH EASY  
ACCESSIBILITY. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 604 921 22/2 6/4  
CALIFORNIA UNIV BERKELEY SANITARY ENGINEERING RESEARCH  
LAB

A STUDY OF FUNDAMENTAL FACTORS PERTINENT TO  
MICROBIOLOGICAL WASTE CONVERSION IN CONTROL OF  
ISOLATED ENVIRONMENTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 MAR 64-30 AUG 66,  
SEP 66 79P SHELEF, G. ; GOLUEKE, C. G. ;  
OSWALD, W. J. ; GEE, H. K. ;  
REPT. NO. SERL-66-8  
CONTRACT: AF 19(628)-2462  
PROJ: AF-8659  
TASK: 865903  
MONITOR: AFCRL 67-0455

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, \*WATER SUPPLIES),  
(\*WASTES(SANITARY ENGINEERING), \*REGENERATION), (\*CLOSED  
ECOLOGICAL SYSTEMS, MANNED SPACECRAFT), CULTURE MEDIA,  
ALGAE, SIMULATION, SPACE ENVIRONMENTS, WATER,  
EVAPORATION, STATISTICAL ANALYSIS, WASTE GASES,  
PREDICTIONS, AIR, UREA, SUN, FOOD DISPENSING, CHLORELLA,  
OXYGEN, NITROGEN, CALCIUM, MAGNESIUM, PHOSPHORUS  
COMPOUNDS, CARBON DIOXIDE, MICROBIOLOGY (U)  
IDENTIFIERS: ALGATRON SYSTEM (U)

THE REPORT DESCRIBES EXPERIMENTS CONCERNED WITH THE  
EFFECT OF VARIOUS ENVIRONMENTAL FACTORS ON REMOVAL OF  
ALGAL NUTRIENTS, DEGREE OF WASTE TREATMENT, AND  
EXTENT OF WATER REGENERATION ACCOMPLISHED WITH THE  
USE OF AN ALGAL-BACTERIAL CULTURE GROWN IN A  
MECHANICALLY ROTATED CULTURE VESSEL (ALGATRON).  
IT ALSO DESCRIBES SIZE AND OPERATIONAL  
CHARACTERISTICS FOR A TWO-MAN ENVIRONMENTAL CHAMBER,  
PRESENTS A DESIGN TO SUPPORT TWO MEN, AND OUTLINES  
BASIC CHARACTERISTICS FOR LARGER CHAMBERS IN A SPACE  
ENVIRONMENT. (AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 665 107      6/11      6/18      6/19  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

LECTURES IN AEROSPACE MEDICINE 6-9 FEBRUARY 1967  
SIXTH SERIES.

(U)

67    541P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AEROSPACE MEDICINE, \*SYMPOSIA), SPACE  
CREWS, MANNED SPACECRAFT, EXTRAVEHICULAR ACTIVITY,  
FLYING PLATFORMS, PRESSURE SUITS, DECOMPRESSION  
SICKNESS, ANOXIA, OTORHINOLARYNGOLOGY, METABOLISM,  
CARDIOVASCULAR SYSTEM, VISION, ACCELERATION TOLERANCE,  
ADAPTATION(PHYSIOLOGY), STRESS(PHYSIOLOGY), TOXIC  
TOLERANCES, CLOSED ECOLOGICAL SYSTEMS, HYGIENE,  
WASTES(SANITARY ENGINEERING), SPACE ENVIRONMENTS,  
ACCELERATION

(U)

IDENTIFIERS: GEMINI

(U)

CONTENTS: PROGRESS IN UNMANNED SPACE  
EXPLORATION; PRE-GEMINI MEDICAL PREDICTIONS VS.  
GEMINI FLIGHT RESULTS; ADVANCED ASPECTS OF  
PRESSURE SUIT DEVELOPMENTS; A STUDY OF HIGH  
ALTITUDE DECOMPRESSION; LEX COSMICA;  
NONPATHOLOGIC HYPERCAPNIA IN MAN; BENDS IN  
SIMULATED EXTRAVEHICULAR ACTIVITY; WHAT HAS SPACE  
EXPERIENCE TAUGHT US ABOUT DISORIENTATION; HUMAN  
TOLERANCE OF PROLONGED EXPOSURE TO A ROTATING  
ENVIRONMENT; HYPODYNAMICS: CARDIOVASCULAR  
ASPECTS; HYPODYNAMICS: METABOLIC ASPECTS;  
VISION IN THE VOID; CARDIAC RESPONSES TO  
ACCELERATION STRESS; SPACE CABIN TOXICOLOGY;  
PROPELLANT TOXICOLOGY; PERSONAL HYGIENE AND  
SANITATION IN AEROSPACE SYSTEMS; WORLD-WIDE  
AEROMEDICAL EVALUATION AND RECENT DEVELOPMENTS;  
INFORMATION PROCESSING ASPECTS OF BIONICS; AND  
SOLVED AND UNSOLVED SPACE MEDICAL PROBLEMS;  
INTERNATIONAL STATUS 1966-1967.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AU- 665 457 6/11 18/2 10/1  
AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB  
OHIO

APPLICATION OF RADIOISOTOPES FOR AEROSPACE WASTE  
RECLAMATION AND WATER SYSTEMS, (U)

SEP 67 23P METZGER, COURTNEY A. ;HERALD,  
ALBERT B. ;REYNOLDS, BOBBY J. ;SHIVERS, RUFUS ;  
MURRAY, ROBERT W. ;  
REPT. NO. AMKL-TR-67-158  
PROJ: AF-6373  
TASK: 637305

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CLOSED ECOLOGICAL SYSTEMS, POWER  
SUPPLIES), (\*RADIOACTIVE ISOTOPES, \*LIFE SUPPORT), WATER  
SUPPLIES, WASTES (SANITARY ENGINEERING), HEATERS, ENERGY  
CONVERSION, CATALYSTS, PYROLYSIS, DISTILLATION (U)

A LIFE SUPPORT SYSTEM DESIGNED FOR AEROSPACE  
APPLICATION WAS THERMALLY POWERED BY A RADIOISOTOPE  
HEAT SOURCE AT A SIGNIFICANT SAVING IN ELECTRICAL  
ENERGY. THIS REPORT SUMMARIZES THE RESEARCH  
PROGRAM AND RESULTING DESIGN, DEVELOPMENT, AND  
EVALUATION OF A VACUUM DISTILLATION-VAPOR PYROLYSIS  
WATER RECLAMATION SYSTEM THAT WAS SUBJECTED TO A 30-  
DAY ISOTOPE POWERED UNMANNED TEST. IN ADDITION TO  
THE SAVINGS OF ELECTRICAL ENERGY THE APPLICATION OF A  
RADIOISOTOPE HEAT SOURCE IS EXPECTED TO RESULT IN A  
SIMPLE AND MORE RELIABLE WATER RECOVERY SYSTEM  
PRODUCING AN EXCELLENT QUALITY WATER WITHOUT THE USE  
OF PRE- OR POST TREATMENT FOR EXTENDED PERIODS OF  
OPERATION. DISCUSSED ARE OTHER WATER RECOVERY  
PROCESSES THAT SHOW GOOD PROMISE FOR THE UTILIZATION  
OF ISOTOPES FOR THE THERMAL ENERGY THAT HAVE BEEN  
SUBJECTED TO COMPARISON EVALUATION USING ELECTRICAL  
ENERGY. THE USE OF SEVERAL WASTE MANAGEMENT  
TECHNIQUES TO OBTAIN A COMPLEX INTEGRATED SYSTEM ARE  
DISCUSSED INCLUDING URINE AND FECAL COLLECTION, FECAL  
STORAGE, POTABLE HOT AND COLD WATER STORAGE AND  
DISPENSING, AND POTABILITY MEASUREMENTS THAT SHOW  
PROMISE FOR THE USE OF THE WASTE HEAT FROM THE  
ISOTOPES. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 667 552 6/11 7/1  
AIRCRAFT POROUS MEDIA INC GLEN COVE N Y

FILTERING SYSTEM FOR AEROSPACE WATER  
RECLAMATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. APR 66-JUL 67;  
DEC 67 41P FEINDLER, KLAUS ;  
CONTRACT: AF 33(615)-3862  
PROJ: AF-6373  
TASK: 637304  
MONITOR: AMRL TR-67-157

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CLOSED ECOLOGICAL SYSTEMS, WATER  
SUPPLIES), (\*LIQUID FILTERS, CLOSED ECOLOGICAL SYSTEMS),  
(\*WATER SUPPLIES, RECOVERY), WASTES(SANITARY  
ENGINEERING), URINE, PURIFICATION, PUMPS,  
TANKS(CONTAINERS), MAINTENANCE, MANNED SPACECRAFT, LIFE  
SUPPORT (U)

A STUDY WAS CONDUCTED TO PROVIDE DESIGN CRITERIA  
FOR A SYSTEM EMPLOYING MULTIFILTRATION FOR RECLAIMING  
BACTERIA-FREE POTABLE WATER FROM WASH WATER,  
DEHUMIDIFICATION WATER, AND WATER RECOVERED FROM  
URINE. BASED ON THE DESIGN CRITERIA DEVELOPED, A  
LABORATORY MODEL WAS CONSTRUCTED AND TESTED. THE  
LABORATORY MODEL CONSISTED OF A TRANSFER PUMP,  
FILTRATION UNITS, A STORAGE TANK, AND A DISPENSER.  
IT WAS DESIGNED TO PROCESS 22 LITERS OF WATER EACH  
DAY DURING A 36-DAY SIMULATED AEROSPACE MISSION, WITH  
NO MAJOR MAINTENANCE, REPLACEMENT OF PARTS, CLEANING,  
OR CALIBRATION. PROVISIONS WERE MADE FOR THE  
REPLACEMENT OF EXPENDABLE PARTS, WHEN REQUIRED, IN  
ORDER TO OPERATE FOR 180 DAYS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 667 571 6/11 7/1 18/2  
GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE  
DIV

VACUUM DISTILLATION, VAPOR PYROLYSIS WATER RECOVERY  
SYSTEM UTILIZING RADIOISOTOPES FOR THERMAL ENERGY. (U)

DESCRIPTIVE NOTE: FINAL REPT. 5 MAY-4 JUL 67,  
NOV 67 94p ESTEN, H. ; MURRAY, R. W. ;  
COOPER, L. ;

REPT. NO. 67SD8124  
CONTRACT: AF 33(615)-3308  
PROJ: AF-6373  
TASK: 637305  
MONITOR: AMRL TR-67-80

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CLOSED ECOLOGICAL SYSTEMS, WATER  
SUPPLIES), (\*DISTILLING PLANTS, CLOSED ECOLOGICAL  
SYSTEMS), (\*WATER SUPPLIES, RECOVERY), WASTES(SANITARY  
ENGINEERING), URINE, VAPORIZATION, PYROLYSIS, HEATING,  
RADIOACTIVE ISOTOPES, PLUTONIUM, CATALYSIS, POWER  
SUPPLIES, STORAGE, MANNED SPACECRAFT, LIFE SUPPORT (U)

A LABORATORY PROTOTYPE SYSTEM FOR PRODUCING,  
STORING AND DISPENSING POTABLE WATER DERIVED FROM  
URINE AND WASH WATER WAS DESIGNED, FABRICATED, AND  
TESTED. THE DESIGN INCORPORATED THE PREVIOUSLY  
ESTABLISHED TECHNIQUE OF VACUUM DISTILLATION OF  
LIQUID WASTES FOLLOWED BY PYROLYSIS OF THE STEAM IN  
THE PRESENCE OF A CATALYST. FOR THE FIRST TIME,  
RADIOISOTOPE HEAT SOURCES (CONTAINING PLUTONIUM  
238) WERE EMPLOYED IN BOTH THE EVAPORATOR AND  
PYROLYSIS SECTIONS TO MINIMIZE THE ELECTRICAL POWER  
REQUIREMENTS FOR A POTENTIAL SPACE APPLICATION.  
THE SYSTEM WAS ALSO DESIGNED TO UTILIZE ELECTRICAL  
AND WASTE HEAT SOURCES AND IS CAPABLE OF ZERO GRAVITY  
OPERATION. THE BASIC PROCESS DEMONSTRATED ITS  
FEASIBILITY FOR LONG DURATION OPERATION PRODUCING  
HIGH QUALITY POTABLE WATER. PERIPHERAL EQUIPMENT,  
SUCH AS, LIQUID LEVEL SENSORS, AND PHASE SEPARATORS  
NEED FURTHER DEVELOPMENT. UNIT WEIGHT WAS 120  
POUNDS AND POWER CONSUMPTION WAS 56 WATT-HOURS PER  
POUND OF WATER RECOVERED. A FLIGHT OPTIMIZED  
DESIGN USING ISOTOPES WOULD WEIGH 58 POUNDS AND  
CONSUME 8 WATT HOURS PER POUND OF WATER RECOVERED.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 667 965 13/4 13/2  
GENERAL AMERICAN TRANSPORTATION CORP NILES ILL GENERAL  
AMERICAN RESEARCH DIV

WATER CONTAINER LINER.

(U)

DESCRIPTIVE NOTE: FINAL REPT. MAR-SEP 67,  
SEP 67 48p NEVERIL, R. B. ; KAPIL, A.  
L. ;  
REPT. NO. GARD-1427-F

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
STANFORD RESEARCH INST., MENLO PARK, CALIF.

DESCRIPTORS: (\*WATER SUPPLIES, \*CONTAINERS),  
POLYETHYLENE PLASTICS, BAGS, COMPATIBILITY, GERMICIDES,  
SODIUM COMPOUNDS, HYPOCHLORITES, SEALS, RELIABILITY,  
ENCAPSULATION, FALLOUT SHELTERS, WASTES (SANITARY  
ENGINEERING), STORAGE TANKS (U)

NEW MATERIALS AND DESIGNS FOR OGD 17-1/2 GALLON  
WATER CONTAINERS WERE INVESTIGATED.  
RECOMMENDATIONS ARE GIVEN FOR UPGRADING THE PRESENT  
'BAG-TYPE' LINERS AND FOR MAKING A MORE RELIABLE BLOW  
MOLDED, STACKABLE LINER. PACKAGING OF THE WATER  
DISINFECTANT IS ALSO RECOMMENDED TO PREVENT AN EXCESS  
AMOUNT FROM BEING ADDED TO THE WATER, SINCE THIS  
CONTRIBUTES TO LINER FAILURES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 670 880 6/5 13/2 7/1  
DEPARTMENT OF THE AIR FORCE NEW YORK 09224 TUSLOG  
DETACHMENT 36 (USAFE)

INFECTIOUS HEPATITIS AND WATER: EVALUATION AND  
CHLORINATION.

(U)

DESCRIPTIVE NOTE: PROFESSIONAL REPT.,  
APR 68 54P POWELL, GEORGE W. ; GIBEAU,  
JOHN K. ; RIORDON, JOHN P. ;  
REPT. NO. DET-36-PR-68-5  
PROJ: 66-6

UNCLASSIFIED REPORT

DESCRIPTORS: (\*INFECTIOUS HEPATITIS VIRUS, CONTROL),  
(\*WATER SUPPLIES, PROTECTION), EPIDEMIOLOGY, WATER  
POLLUTION, INHIBITION, MONITORS, SOURCES, CHLORINATION,  
CONTAMINATION, DISEASE VECTORS, BACTERIA,  
CONCENTRATION(CHEMISTRY), MIDDLE EAST, SEWAGE, WATER  
WELLS, COSTS, RESISTANCE(BIOLOGY), TASTE,  
ACCEPTABILITY

(U)

MILITARY AGE PERSONNEL, WHO WERE REARED ON WATER  
AND FOOD WHICH WERE RIGIDLY SEPARATED FROM HUMAN  
FECAL CONTAMINATION AND/OR WHICH WERE EXTENSIVELY  
PROCESSED TO KILL ALL PATHOGENIC ORGANISMS, ARE  
SUSCEPTIBLE TO A LONG PERIOD OF NON-EFFECTIVENESS DUE  
TO HEPATITIS INFECTION. THIS TROOP NON-  
EFFECTIVENESS CAN ONLY BE PREVENTED BY CONTINUATION  
OF SUCH SEPARATION AND/OR SUCH PROCESSING OF 'ORAL  
CONSUMABLES.' CLOSE MONITORING; SECURING A  
BACTERIAL FREE WATER SOURCE; PLUS CHLORINATION OF THE  
WATER TO 0.4 PPM HOCL AT THE TREATMENT SITE AFTER  
30 MINUTES CONTACT TIME APPEAR TO BE AN INEXPENSIVE  
BUT USUALLY ADEQUATE METHOD FOR THE TEMPORARY  
PROCESSING OF WATER TO PREVENT SPREADING OF HEPATITIS  
BY THE WATER ROUTE. IF THE SOURCE WATER OR THE  
DISTRIBUTION SYSTEM IS BACTERIALLY CONTAMINATED,  
OTHER MEASURES ARE NECESSARY. THESE ARE REVIEWED.  
THIS CHLORINE LEVEL IS ACCEPTABLE TO MOST CONSUMERS  
FOR MOST PURPOSES IF PHENOLS OR OTHER TASTE/ODOR  
THRESHOLD LOWERING AGENTS ARE NOT PRESENT. WHEN A  
SIGNIFICANT PERCENTAGE OF TROOPS ARE LIKELY TO DRINK  
UNAUTHORIZED WATER, MEASURES SHOULD BE TAKEN TO  
REDUCE THIS PERCENTAGE. CAUSES FOR TROOPS  
CONSUMING UNAUTHORIZED WATER ARE REVIEWED.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 671 703 13/2 15/3  
ARMY ENGINEER RESEARCH AND DEVELOPMENT LABS FORT BELVOIR  
VA

HUMAN WASTE STUDIES IN AN OCCUPIED CIVIL DEFENSE  
SHELTER, (U)

OCT 65 98P DESROSIERS, PAUL E. ;  
PROJ: OCD-OS-63-235

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CIVIL DEFENSE, SHELTERS),  
(\*WASTES(SANITARY ENGINEERING), STORAGE), HUMANS,  
SAMPLING, WATER, BACTERIA, WASTE GASES, ODORS, OLEIC  
ACID, SULFATES, GERMICIDES, CONTAINERS (U)

THE REPORT COVERS HUMAN WASTE STUDIES CONDUCTED IN  
AN OCCUPIED CIVIL DEFENSE FALLOUT SHELTER  
FACILITY. BOTH THE SANITARY VALUT WASTE SYSTEM AND  
PREFERRED CHEMICAL ODOR CONTROL AGENT WERE EVALUATED  
UNDER THESE SHELTER CONDITIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 672 818 6/11  
SCIENTIA RESEARCH LABS INC SEATTLE WASH

POLYELECTROLYTE COAGULANTS FOR USE IN THE LIQUID-  
SOLID PHASE SEPARATION OF HIGH-SOLIDS ACTIVATED  
SLUDGE. (U)

DESCRIPTIVE NOTE: REPT. FOR 15 APR-15 JUL 65,  
APR 68 18p CHAPMAN, D. D. ; OKEY, R.  
W. ; SANTLER, F. T. ;  
CONTRACT: AF 41(609)-2808  
PROJ: AF-7930  
TASK: 793001  
MONITOR: SAM TR-68-39

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WASTES(SANITARY ENGINEERING),  
SEPARATION), CLOSED ECOLOGICAL SYSTEMS, LIFE SUPPORT,  
HUMANS, CHLORELLA, GROWTH(PHYSIOLOGY), FEASIBILITY  
STUDIES, ELECTROLYTES, COAGULATION, ALGAE, METABOLISM(U)

THE USE OF THE ACTIVATED SLUDGE PROCESS TO TREAT  
WASTES ARISING IN A REMOTE ENVIRONMENT APPEARS TO BE  
FEASIBLE IF THE PROCESS CAN BE SUCCESSFULLY  
MINIATURIZED. A MAJOR PROBLEM IN THE DEVELOPMENT  
OF EQUIPMENT UTILIZING THE PROCESS IS THE CONTINUOUS  
SEPARATION OF EFFLUENT OF SATISFACTORY QUALITY. A  
METHOD WAS DEVISED FOR PRE-TREATING THE MIXED LIQUOR  
WITH POLYELECTROLYTE COAGULANTS TO AID IN PHASE  
SEPARATION. THE EFFECT OF COAGULANTS ON THE  
METABOLISM OF ALGAE WAS ALSO EVALUATED. THE  
POLYELECTROLYTE C-32 PRODUCED BY THE DOW  
CHEMICAL COMPANY WAS FOUND TO ENHANCE THE  
FILTERABILITY OF HIGH-SOLIDS ACTIVATED SLUDGE, AND TO  
PRODUCE AN EFFLUENT OF GOOD QUALITY FOR THE GROWTH OF  
CHLORELLA PYRENOIDOSA 71105. (AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 673 564 8/8 9/2  
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION WASHINGTON  
D C DIV OF TECHNICAL CONTROL

RIVER BASIN SIMULATION PROGRAM, (U)

68 294P PISANO, WILLIAM C. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-673 777.

DESCRIPTORS: (RIVERS, MATHEMATICAL MODELS), HYDROLOGY,  
SIMULATION, DAMS, STORAGE, PERIODIC VARIATIONS,  
WASTES (INDUSTRIAL), MONITORS, SOLIDS, WATER POLLUTION,  
COMPUTER PROGRAMMING, FLOODS, PUNCHED CARDS, WATER,  
AQUATIC ANIMALS, IRRIGATION SYSTEMS, DESIGN, MANAGEMENT (U)  
IDENTIFIERS: COMPUTERIZED SIMULATION (U)

THE SET OF PROGRAMS AND OPTIONS DESCRIBED IN THE  
STUDY PROVIDE A VERSATILE NEW APPROACH TO RIVER BASIN  
PLANNING FOR WATER QUALITY MANAGEMENT. ALTHOUGH  
WATER QUALITY RELATIONSHIPS ARE THE PRIMARY  
CONSIDERATIONS OF THE CALCULATIONS PERFORMED HERE,  
THE PROGRAMS ARE VERY GENERAL AND CAN BE MANIPULATED  
TO CONSIDER MANY WATER USES. SINCE WATER QUALITY  
STRONGLY EFFECTS ALL USES OF WATER, THE PROGRAMS ARE  
DESIGNED TO CONSIDER MOST OF THE LEGITIMATE WATER  
USES. THE MODELS ARE CAPABLE OF ANALYZING THE  
QUALITY-QUANTITY INTERRELATIONSHIPS FOR MUNICIPAL AND  
INDUSTRIAL WATER SUPPLY, FLOOD CONTROL, FISH AND  
AQUATIC LIFE, IRRIGATION, AND RECREATION. THESE  
AND OTHER USES CAN BE CONSIDERED EITHER BY STUDYING  
HOW TO MANAGE EXISTING SITUATIONS OR BY INTRODUCING  
VARIOUS DESIGN ALTERNATIVES CONCERNING PHYSICAL AND  
STRUCTURAL COMPONENTS. AS AN ANALYTICAL TECHNIQUE  
FOR PLANNING AND UTILIZING RIVER BASINS, THIS  
'RIVER BASIN SIMULATION PROGRAM' REPRESENTS A  
MAJOR PROGRAMMING EFFORT HAVING AS ITS BASE A SOUND  
ANALYTICAL AND ENGINEERING CONSIDERATION OF WATER  
QUALITY. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 673 777 8/8  
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION WASHINGTON  
D C DIV OF TECHNICAL CONTROL

FITTING THE RED RIVER OF THE NORTH BASIN TO THE  
GENERAL RIVER BASIN SIMULATION PROGRAM. (U)

APR 67# 39P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-673 564.

DESCRIPTORS: (•RIVERS, MATHEMATICAL MODELS), HYDROLOGY,  
SIMULATION, DAMS, STORAGE, PERIODIC VARIATIONS,  
WASTES(INDUSTRIAL), MONITORS, SOLIDS, WATER POLLUTION,  
SALTS, QUALITY CONTROL, MANAGEMENT PLANNING AND CONTROL,  
SITE SELECTION, MINNESOTA, NORTH DAKOTA, FEASIBILITY  
STUDIES (U)

A MATHEMATICAL MODEL OF THE RED RIVER OF THE  
NORTH BASIN, MINNESOTA AND NORTH DAKOTA,  
CAN BE USED AS A WATER QUALITY PLANNING MANAGEMENT  
TOOL TO SIMULATE TIME AND SPATIAL VARIATIONS OF FLOW  
AND CONCENTRATIONS OF TOTAL DISSOLVED SOLIDS  
THROUGHOUT THE BASIN. OTHER PARAMETERS OF WATER  
QUALITY CAN BE INCLUDED IN THE MODEL WITH LITTLE  
EFFORT. THE MODEL INCORPORATES HYDROLOGIC AND  
WATER QUALITY DATA AND THE FIERING-PISANO  
MATHEMATICAL MODEL DESCRIBED IN THE REPORT 'RIVER  
BASIN SIMULATION PROGRAM' ISSUED BY THE  
OFFICE OF COMPREHENSIVE PLANNING AND  
PROGRAMS, MARCH 1967. GIVEN (1) THE  
RIVER BASIN SIMULATION PROGRAM, (2) THIS  
REPORT, AND (3) TAPE OF OPERATIONAL HYDROLOGY,  
OTHER INVESTIGATORS CAN STUDY VARIOUS COMBINATIONS OF  
WATER QUALITY MANAGEMENT SCHEMES. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 674 486 13/2 7/1  
NAVAL INTELLIGENCE COMMAND WASHINGTON D C TRANSLATION  
DIV

PURIFICATION OF WASTE WATERS RESULTING FROM THE  
MANUFACTURE OF DICYCLOHEXYLAMINE NITRITE (NDA)  
(OBEZVREZHIVANIE STOCHNOI VODY PROIZVODSTVA NITRITA  
DITSIKLOGEKSILAMINA (NDA)), (U)

JUL 68 11P SHARONOVA, N. F. ILIFSHITS,  
A. A. ;  
REPT. NO. NIC-TRANS-2644

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF UNIDENTIFIED RUSSIAN  
LANGUAGE MONO.

DESCRIPTORS: (\*WASTES(INDUSTRIAL), PURIFICATION),  
ORGANIC NITROGEN COMPOUNDS, WATER POLLUTION,  
DISTILLATION, FERTILIZERS, USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

IT WAS FOUND THAT THE WASTE WATER OF  
DICYCLOHEXYLAMINE NITRITE (DCHN) MANUFACTURE IS  
POLLUTED WITH ORGANIC SUBSTANCES CHIEFLY WITH DCHN  
AND WITH MINERAL SALTS, SUCH AS NITRITE AND SULFATE  
OF SODIUM. IT WAS ALSO FOUND THAT, WHEN DISTILLING  
WASTE WATERS IN THE PRESENCE OF ALKALI AND REMOVING  
50% OF THE DISTILLATE, THE ORGANIC CONTAMINANTS GO  
COMPLETELY OVER INTO THE DISTILLATE. THE STILL  
BOTTOMS FROM THE DISTILLATION OF WASTE WATERS CONTAIN  
ONLY MINERAL SALTS, SODIUM SULFATE, AND SODIUM  
NITRITE. THE RESULTS OF THE EXPERIMENTS USING  
STILL RESIDUE AS FERTILIZER INDICATED THAT IT HAS A  
FAVORABLE EFFECT, BY INCREASING THE CROP OF SUGAR-  
BEETS 124-127% IN COMPARISON WITH THE CONTROL  
SAMPLE. A METHOD WAS ELABORATED FOR THE  
PURIFICATION OF WASTE WATERS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 674 601 6/9 13/2  
DEPARTMENT OF THE AIR FORCE NEW YORK 09224 TUSLOG  
DETACHMENT 36 (USAFE)

SANITARY INVESTIGATION OF THE WATER SOURCE AND  
DISTRIBUTION SYSTEM OF IZMIR, TURKEY.

(U)

DESCRIPTIVE NOTE: PROFESSIONAL REPT.,  
AUG 68 31P GIBEAU, JOHN K. INIX,  
WILLIAM K. INECKER, DAVID R. RICHARDSON,  
EARNEST ;  
REPT. NO. DET-36-PR-68-9  
PROJ: 65-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, TURKEY), (\*WATER  
SUPPLIES, SANITARY ENGINEERING), BIOLOGICAL  
CONTAMINATION, CHEMICAL CONTAMINATION,  
ENTEROBACTERIACEAE, SAMPLING, INFECTIOUS DISEASES,  
WASTES (SANITARY ENGINEERING), CHLORINE, PURIFICATION,  
TABLES (DATA)

(U)

THREE HUNDRED SEVENTY WATER SAMPLES FOR  
BACTERIOLOGICAL AND CHLORINE ANALYSIS WERE TAKEN FROM  
THE WATER SOURCE, WATER FACTORY, RESERVOIRS AND  
DISTRIBUTION SYSTEM IN THE ALSANCAK SECTION OF  
IZMIR, TURKEY FROM JUNE 1967 TO JUNE 1968.  
THE CHEMICAL QUALITY OF THE IZMIR WATER WAS  
EXCELLENT AND MET EUROPEAN DRINKING WATER  
STANDARDS. THE MAIN WATER SOURCE (HALKAPINAR  
SPRINGS) AND THE DISTRIBUTION SYSTEM WERE OFTEN  
CONTAMINATED WITH ORGANISMS OF THE COLIFORM AND FECAL  
STREPTOCOCCUS GROUPS. CONTAMINATION OF THE SOURCE  
IS PROBABLY AT LEAST PARTIALLY ANIMAL BUT MAY,  
ESPECIALLY IN THE WINTER RAINY SEASON, BE POTENTIALLY  
HUMAN AND THUS MIGHT SERVE TO TRANSMIT ENTERIC  
INFECTIONS SUCH AS SHIGELLOSIS AND INFECTIOUS  
HEPATITIS. ALSO SKIN FURUNCULOSIS AND LOWER  
GENITO-URINARY TRACT INFECTIONS MAY BE SLIGHTLY  
INCREASED FROM BATHING IN THIS WATER DURING TIMES OF  
HIGH CONTAMINATION. AT 31C (88F) THE  
RECOMMENDED 0.6 PPM HOCL (HYPOCHLOROUS ACID)  
COULD BE ACHIEVED BY ADDING 336 KILOGRAMS OF CHLORINE  
GAS TO THE 40 MILLION GALLONS OF WATER CONSUMED PER  
DAY AT A COST OF 672 TURKISH LIRA. AT 38F ONE  
DROP OF SODIUM HYPOCHLORITE CONTAINING 5.25 PERCENT  
AVAILABLE CHLORINE (CLOROX) IS REQUIRED PER 1 1/2  
QUARTS OF WATER. AFTER THE REQUIRED 30 MINUTES  
CHLORINE CONTACT TIME, THIS CONCENTRATION OF HOCL  
SHOULD ASSURE A POTABLE DRINKING WATER.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 674 956 8/10 13/2  
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

ISOTOPE ANALYSIS OF SEAWATER BY MASS SPECTROMETRY,

(U)

67 14P CHOW, TSAI HWA J. ;  
CONTRACT: NONR-2216(23)  
PROJ: NR-083-005

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. WATER POLLUTION  
CONTROL FEDERATION, V4U N3 PT1 P399-411 MAR 68.

SUPPLEMENTARY NOTE: PRESENTED AT THE ANNUAL CONFERENCE  
OF THE WATER POLLUTION CONTROL FEDERATION  
(40TH), NEW YORK, N.Y. 8-13 OCT 67.

DESCRIPTORS: (\*WATER POLLUTION, SEA WATER), (\*SEA WATER,  
\*MASS SPECTROSCOPY), ISOTOPES, MICROANALYSIS, SPECTRUM  
ANALYZERS, LEAD(METAL), WASTES(INDUSTRIAL) (U)

THE REVIEW INCLUDES A DISCUSSION OF A SUITABLE MASS  
SPECTROMETER, THE ISOTOPE DILUTION TECHNIQUE AND THE  
SCOPE OF ITS APPLICABILITY, A DESCRIPTION OF ANALYTIC  
PROCEDURE, AND A CASE HISTORY INVOLVING THE  
DETERMINATION OF LEAD ISOTOPES IN SEA WATER. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 675 269 8/3  
JOHNS HOPKINS UNIV BALTIMORE MD CHESAPEAKE BAY INST

A NEW SET OF OCEANIC DIFFUSION DIAGRAMS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JUN 68 55P UKUBO, AKIRA ;  
REPT. NO. TR-38, REF-68-6  
CONTRACT: NONR-4010(11), AT(30-1)-3109  
MONITOR: NYO 3109-35

UNCLASSIFIED REPORT

DESCRIPTORS: (\*OCEANS, WASTES(INDUSTRIAL)),  
(\*WASTES(INDUSTRIAL), OCEAN CURRENTS), TRACER STUDIES,  
DIAGRAMS, TURBULENCE, DYES, FLUORESCENCE, MATHEMATICAL  
PREDICTION, SURFACE PROPERTIES, PERIODIC VARIATIONS,  
INTEGRALS, PROBABILITY DENSITY FUNCTIONS, STATISTICAL  
PROCESSES, DISTRIBUTION, FLUOROMETERS, ANALYSIS OF  
VARIANCE (U)

IDENTIFIERS: RHODAMINE B DYE (U)

SOME EMPIRICAL RELATIONS BETWEEN DIFFUSION  
CHARACTERISTICS ARE INVESTIGATED BY THE USE OF  
CAREFULLY EXAMINED DATA FROM DYE RELEASE EXPERIMENTS  
IN THE SURFACE LAYER OF THE SEA. THESE DATA COVER  
A TIME SCALE OF DIFFUSION RANGING FROM 1 HOUR TO 1  
MONTH AND A LENGTH SCALE FROM 100 M TO 100 KM. TWO  
'OCEANIC DIFFUSION DIAGRAMS' ARE PREPARED; ONE  
SHOWING HORIZONTAL VARIANCE VERSUS DIFFUSION TIME AND  
THE OTHER SHOWING APPARENT DIFFUSIVITY VERSUS THE  
SCALE OF DIFFUSION. THE OVERALL BEHAVIORS OF THE  
HORIZONTAL VARIANCE AND OF THE APPARENT DIFFUSIVITY  
ARE EVIDENTLY DIFFERENT FROM THOSE WHICH THE  
SIMILARITY THEORY OF TURBULENCE DEDUCES. HOWEVER,  
THERE STILL REMAINS A POSSIBILITY THAT THE SIMILARITY  
THEORY MAY BE VALID LOCALLY IN TIME- OR LENGTH-SCALE  
WITH A VARIABLE PARAMETER, I.E., THE RATE OF  
TURBULENT ENERGY TRANSFER. THE DIAGRAMS PROVIDE A  
PRACTICAL MEANS TO PREDICT THE RATE OF HORIZONTAL  
SPREAD OF SUBSTANCE INTRODUCED FROM AN INSTANTANEOUS  
POINT-SOURCE AS WELL AS THE APPARENT DIFFUSIVITY AS A  
FUNCTION OF THE SIZE OF DIFFUSING PATCH.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 675 354 13/2

NATIONAL RESEARCH COUNCIL OF CANADA OTTAWA (ONTARIO) DIV OF  
BUILDING RESEARCH

OPENING UNSERVICED LOTS TO BUILDING BY USE OF SEPTIC  
TANK. (U)

DESCRIPTIVE NOTE: HOUSING NOTE,  
JUL 66 6P WATSON, W. B. ;  
REPT. NO. HN-27

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPRINTED FROM CANADIAN BUILDER,  
/16 NS P42-45 MAY 66.

DESCRIPTORS: (\*SEWAGE, RURAL AREAS),  
(\*TANKS(CONTAINERS), SEWAGE), HAZARDS, SOILS, TERRAIN,  
POPULATION, DESIGN, ECONOMICS, OPERATION, MAINTENANCE,  
SUBSTITUTES, SPECIFICATIONS, PUBLIC HEALTH, CANADA (U)  
IDENTIFIERS: SEPTIC TANKS (U)

THE VALUE, CONSTRUCTION, MAINTENANCE, AND OPERATION  
OF SEPTIC TANKS IN ISOLATED AREAS ARE DISCUSSED,  
ALONG WITH PROBLEMS AND HAZARDS. (U)

UNCLASSIFIED

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 675 355 13/3 11/9  
NATIONAL RESEARCH COUNCIL OF CANADA OTTAWA (ONTARIO) DIV OF  
BUILDING RESEARCH

PLASTIC PIPE: ITS USES IN BUILDING  
CONSTRUCTION.

(U)

DESCRIPTIVE NOTE: HOUSING NOTE,  
OCT 65 4P WATSON, W. B. ;  
REPT. NO. HN-26

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPRINTED FROM CANADIAN BUILDER,  
V15 N10 P64-65, 68 OCT 65.

DESCRIPTORS: (\*CONSTRUCTION MATERIALS, PLASTICS),  
(\*PIPES, STANDARDS), PRESSURE VESSELS, WASTES (SANITARY  
ENGINEERING), VENTING, UNDERGROUND STRUCTURES,  
BUILDINGS, OILS, GASES, WATER, MECHANICAL PROPERTIES,  
SURFACE PROPERTIES, THERMOPLASTIC RESINS, WATER WELLS,  
COSTS, INSTALLATION, JOINTS (U)  
IDENTIFIERS: PLASTIC PIPES (U)

THE DOCUMENT DISCUSSES FEASIBILITY AND STANDARDS  
FOR THE USE OF PLASTIC PIPE IN BUILDING  
CONSTRUCTION.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 678 144 6/13  
ARMY BIOLOGICAL LABS FREDERICK MD

SANITARY AND BACTERIOLOGICAL METHODS AND THE  
SOLUTION OF PRACTICAL SANITARY PROBLEMS, (U)

JUL 68 17P MATS, L. I. ;  
REPT. NO. TRANS-923

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF GIGIENA I SANITARIYA  
(USSR) V27 N10 P94-100 1962.

DESCRIPTORS: (.MICROBIOLOGY, .SANITARY ENGINEERING),  
PUBLIC HEALTH, WATER SUPPLIES, AIR, ENVIRONMENT, SEWAGE,  
EPIDEMIOLOGY, CLOSTRIDIUM, STAPHYLOCOCCUS,  
STREPTOCOCCUS, BACILLUS, TEST METHODS, IDENTIFICATION,  
USSR (U)

IDENTIFIERS: TRANSLATIONS (U)

THE DOCUMENT EMPHASIZES THE SUBSTANTIAL PLACE IN  
SANITARY MICROBIOLOGY WHICH IS GIVEN TO THE  
DEVELOPMENT OF METHODS OF EVALUATING THE SANITARY-  
HYGIENIC STATE OF OBJECTS IN THE EXTERNAL ENVIRONMENT  
AND TO THE INDICATION OF PATHOGENS IN THE SAME  
ENVIRONMENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 678 427 13/10 13/1 7/4  
IONICS INC WATERTOWN MASS

AN ELECTROCHEMICAL CARBON DIOXIDE REDUCTION -  
OXYGEN GENERATION SYSTEM HAVING ONLY LIQUID WASTE  
PRODUCTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. MAY 67-MAR 68 ON PHASE  
2.

APR 68 41P MELLER, FLOYD H. ;  
CONTRACT: N00014-66-C0139

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SUBMARINES, \*CONTROLLED ATMOSPHERES),  
(\*CARBON DIOXIDE, REDUCTION(CHEMISTRY)), CARBON DIOXIDE,  
ELECTROCHEMISTRY, WASTES(INDUSTRIAL), LIQUIDS, DISPOSAL,  
CATHODES, MERCURY, GALLIUM, INDIUM, ALLOYS,  
ELECTROLYTES, ANODES, WATER, OXYGEN  
IDENTIFIERS: HABITABILITY

(U)

(U)

THE ELECTROCHEMICAL REDUCTION OF CARBON DIOXIDE HAS  
BEEN INVESTIGATED AS A MEANS OF SIMPLIFYING THE  
DISPOSAL OF CARBON DIOXIDE AND HYDROGEN FROM A  
SUBMARINE ATMOSPHERIC REGENERATION UNIT. EJECTION  
OF THESE MATERIALS AS ORGANIC LIQUID WASTES IS  
PREFERABLE TO THE COMPRESSION AND GAS PHASE DISCHARGE  
SYSTEMS IN CURRENT USE. THIS INVESTIGATION  
COMPRISES PHASE II OF THE PROBLEM OF DEVELOPING AN  
ELECTROCHEMICAL CELL TO ACCOMPLISH THE DESIRED  
REDUCTION REACTIONS. CONCEPTUALLY, THE CELL  
CONSISTS OF AN ANODE AT WHICH WATER IS ELECTROLYZED  
TO OXYGEN, A CATHODE AT WHICH CARBON DIOXIDE IS  
REDUCED, AND AN ELECTROLYTE PATH BETWEEN THE TWO.  
A TWO STAGE REDUCTION IS REQUIRED TO BALANCE THE  
SYSTEM METABOLICALLY CONSISTING OF THE FOLLOWING  
GENERAL PROGRESSION: CO<sub>2</sub> YIELDS HCOOH YIELDS  
HCHO OR CH<sub>3</sub>OH. FOUR CATHODE MATERIALS WERE  
FOUND TO CATALYZE THE CO<sub>2</sub> REDUCTION. THEY ARE  
MERCURY, GALLIUM, INDIUM AND THE QUATERNARY ALLOY  
CERROLOW 136. THE LATTER MATERIAL IS MOST  
EFFECTIVE WHEN USED IN THE LIQUID PHASE. THE  
REDUCTION OF HCOOH IS ACCOMPLISHED TO A LIMITED  
DEGREE ON TIN OR CERROLOW 136. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 681 127 6/11  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

BATCH-FEEDING STUDIES ON HIGH-SOLIDS ACTIVATED  
SLUDGE FOR TREATING CONCENTRATED HUMAN WASTE. (U)

DESCRIPTIVE NOTE: REPT. FOR JAN-JUN 67,  
SEP 68 22P RYAN, MICHAEL J. ; MILLER,  
RICHARD L. ;  
REPT. NO. SAM-TR-68-108  
PROJ: AF-7930  
TASK: 793001

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CLOSED ECOLOGICAL SYSTEMS;  
\*WASTES(SANITARY ENGINEERING)), OPTIMIZATION, OXIDATION,  
STABILIZATION, BACTERIA, METABOLISM,  
MODELS(SIMULATIONS), FEED PUMPS, TABLES(DATA), SPACE  
BIOLOGY (U)  
IDENTIFIERS: \*ACTIVATED SLUDGE PROCESS, \*FEED  
RATE (U)

AS PART OF A CONTINUING AIR FORCE RESEARCH  
EFFORT TOWARD THE DEVELOPMENT OF A BIOLOGIC WASTE  
MANAGEMENT SYSTEM FOR CLOSED ENVIRONMENTS, STUDIES  
WERE CONDUCTED ON A MINIATURIZED ACTIVATED SLUDGE  
PROCESS FOR TREATING CONCENTRATED HUMAN WASTES.  
DURING A 40-DAY CONTINUOUS RUN, A PROTOTYPE SLUDGE  
REACTOR WAS FED BATCHWISE (DAILY) WITH AN  
INCREASING QUANTITY OF MIXED HUMAN WASTE. REMOVAL  
OF CHEMICAL OXYGEN DEMAND (COD) AND THE QUALITY OF  
THE CLARIFIED PROCESS EFFLUENT WERE MONITORED AS  
FUNCTIONS OF TIME AND THE FEEDING RATE.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 682 759 13/2  
OFFICE OF THE CHIEF SURGEON FORT AMADOR CANAL ZONE

STABILIZATION POND OPERATION IN TROPICAL  
AREAS.

(U)

DESCRIPTIVE NOTE: ANNUAL PROGRESS REPT. 13 DEC 67-13  
DEC 68.

FEB 69 5P LONGLEY, KARL E. ;  
PROJ: DA-3-A-062110-A-806

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*TROPICAL REGIONS),  
(\*WASTES(SANITARY ENGINEERING), DISPOSAL),  
STABILIZATION, CONSTRUCTION, ALGAE, OXYGEN, SEWAGE,  
POPULATION, SAMPLING, PANAMA (U)  
IDENTIFIERS: STABILIZATION PONDS (U)

THE FIRST PART OF THE REPORT IS CONCERNED WITH  
ADMINISTRATION AND CONSTRUCTION, WHILE THE SECOND  
PART OF THE REPORT PRESENTS THE LIMITED AMOUNT OF  
DATA COLLECTED DURING 1968. A CONSERVATIVE SUMMARY  
OF THESE DATA INDICATES THAT STABILIZATION PONDS IN  
TROPICAL AREAS WILL OPERATE SATISFACTORILY AT ORGANIC  
LOADINGS IN EXCESS OF A POPULATION EQUIVALENT OF 300  
CAPITA PER ACRE-DAY. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 682 896 5/11 13/1 5/3  
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA PROGRAM  
ANALYSIS DIV

COST-REDUCING CONDOMINIUM SYSTEMS FOR LOW-COST  
HOMES,

(U)

OCT 68 138P SZEGO, G. C. ;  
REPT. NO. S-325  
CONTRACT: DAHC15-67-C-0011, HUD-H-931  
MONITOR: IDA/HQ 68-9368

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HOUSING(DWELLINGS), ELECTRICAL  
EQUIPMENT), COSTS, SYSTEMS ENGINEERING, COMMUNICATIONS  
CENTRAL, HEATING, VENTILATION, AIR CONDITIONING  
EQUIPMENT, WASTES(SANITARY ENGINEERING), NUMERICAL  
ANALYSIS, URBAN AREAS, FEASIBILITY STUDIES, ENVIRONMENT,  
TABLES(DATA) (U)  
IDENTIFIERS: LOW COST HOUSING (U)

THIS STUDY INVESTIGATES PARAMETRICALLY THE  
POSSIBILITY OF MAKING SUBSTANTIAL SAVINGS IN FIRST-  
COST AND OPERATING COST IN PROVIDING HEATING,  
VENTILATING, AND AIR CONDITIONING (HVAC); SEWAGE  
DISPOSAL; AND SOLID WASTE DISPOSAL FOR A SMALL  
INDIVIDUAL HOUSE. THE STUDY FOCUSES ON THE VALUE  
OF A CONDOMINIUM APPROACH TO THE PROVISION OF THE  
ESSENTIAL SERVICES. A SOPHISTICATED SYSTEM WAS  
DESIGNED TO EMPLOY THE HIGH THERMAL EFFICIENCY OF THE  
HEAT PUMP WITH A DIESEL PRIME MOVER FROM WHICH WASTE  
HEAT COULD BE RECOVERED AND WHICH ALSO PROVIDES  
COOLING CAPABILITY. A COMPLETE PARAMETRIC ANALYSIS  
HAS BEEN CARRIED OUT, TAKING INTO ACCOUNT  
CLIMATOLOGICAL, HEATING, AND COOLING LOAD VARIATIONS  
IN SIX CITIES. FOR SEWAGE DISPOSAL, FAIRFAX  
COUNTY, VIRGINIA, WAS TAKEN AS AN EXAMPLE AND A  
VARIETY OF CIRCUMSTANCES WERE PARAMETRICALLY  
ANALYZED. WHILE IT APPEARS THAT IN GENERAL,  
CONDOMINIUM HVAC CAN BE A HIGHLY ECONOMICAL  
CONCEPT, THIS IS NOT ALWAYS TRUE OF SEWAGE DISPOSAL  
NOR OF SOLID WASTE DISPOSAL. AN ADVANTAGE OF THE  
CONDOMINIUM APPROACH TO THE LATTER TWO STEMS FROM  
ECONOMIES EARNED BY TYING THEM TOGETHER.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 683 042 6/12  
ARMY BIOLOGICAL LABS FREDERICK MD

ACHIEVEMENTS OF SOVIET DISINFECTION, (U)

JAN 69 16P VASHKOV, V. I. ;  
REPT. NO. TRANS-2390

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF ZHURNAL MIKROBIOLOGII,  
EPIDEMIOLOGII I IMMUNOBIOLOGII (USSR) V44 N9 P7-13  
1967.

DESCRIPTORS: (\*GERMICIDES, USSR), INFECTIOUS DISEASES,  
EPIDEMIOLOGY, MORTALITY RATES, PUBLIC HEALTH, SANITARY  
ENGINEERING, WATER SUPPLIES, CHEMICAL COMPOUNDS, (U)  
CHEMICAL ANALYSIS (U)  
IDENTIFIERS: TRANSLATIONS (U)

ACHIEVEMENTS OF SOVIET DISINFECTION--TRANSLATION.



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 664 418 13/13 13/2  
NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF

SURVEY OF BIOSCIENCE PROBLEMS AT BUDOCKS  
ACTIVITIES.

(U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,  
NOV 65 101p VIND, HAROLD P. O'NEILL,  
THOMAS B. ;  
REPT. NO. NCEL-TN-814

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NAVAL SHORE FACILITIES, STRUCTURES),  
(\*STRUCTURES, MAINTENANCE), BUILDINGS, PIERS, WATER  
POLLUTION, WOOD, STEEL, REINFORCED CONCRETE, ASBESTOS,  
CEMENTS, ASPHALT, PROTECTIVE COVERINGS, DECOMPOSITION,  
WASTES (SANITARY ENGINEERING), BIOLOGICAL CONTAMINATION,  
OCEANOGRAPHY, STATE-OF-THE-ART REVIEWS (U)

THE REPORT DISCUSSES A REVIEW OF BIOSCIENCE-  
ORIENTED PROBLEMS AT FIELD ACTIVITIES. THE PRIMARY  
PURPOSE OF THE BIOSCIENCE STUDY IS TO ASCERTAIN IF  
SPECIFIC BIOLOGICAL RESEARCH IS JUSTIFIABLE.  
ANOTHER OBJECTIVE OF THE STUDY IS TO DETERMINE IF  
THERE ARE AREAS OF BIOLOGICAL INVESTIGATION THAT  
SHOULD BE PURSUED, AND, IF SO, TO DELINEATE THOSE  
AREAS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 685 850 13/2  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H  
COLD REGIONS SCIENCE AND ENGINEERING MONOGRAPH 3,  
SECTION CSA: WATER SUPPLY IN COLD REGIONS, (U)  
JAN 69 94P ALTER, AMOS J. ;  
REPT. NO. CRREL-CRSE-J-CSA  
PROJ: DA-1-T-062112-A-130

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER SUPPLIES, \*ARCTIC REGIONS),  
SANITARY ENGINEERING, ENVIRONMENT, SOURCES, DESIGN,  
OPERATION, ATMOSPHERIC TEMPERATURE, WATER POLLUTION,  
PERMAFROST, MILITARY REQUIREMENTS, INFECTIOUS DISEASES,  
COLD WEATHER TESTS, ALASKA (U)  
IDENTIFIERS: COLD REGIONS, WATER TREATMENT (U)

THE MONOGRAPH OUTLINES THE INFLUENCE OF A COLD  
ENVIRONMENT ON SANITARY ENGINEERING WORKS AND  
SERVICES. IT THEN DEALS WITH WATER SUPPLY IN COLD  
REGIONS: SOURCES, DISTRIBUTION SYSTEMS, TREATMENT  
PROCESSES AND POSSIBLE FUTURE SUPPLY FROM OTHER THAN  
GEOLOGICAL SOURCES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 688 099 5/10 15/3 13/13  
GEORGIA UNIV ATHENS CIVIL DEFENSE RESEARCH

SHELTER OCCUPANCY STUDIES AT THE UNIVERSITY OF  
GEORGIA. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 68 328P HAMMES, JOHN A. ;AHEARN,  
THOMAS R. ;FOUGHNER, JAMES W. ;BEUSSEE, MAY  
P. ;BRAUN, MARY E. ;  
CONTRACT: DAHC20-68-C-0114  
PROJ: AF-1500  
TASK: 1520

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO APPENDICES, AD-688  
100.

DESCRIPTORS: (\*CIVIL DEFENSE, FALLOUT SHELTERS),  
(\*FALLOUT SHELTERS, \*SOCIAL PSYCHOLOGY), CIVIL DEFENSE,  
CIVILIAN PERSONNEL, TRAINING, WATER SUPPLIES, MEDICAL  
EXAMINATION, SANITARY ENGINEERING, FOOD, FIRE SAFETY,  
CHILDREN, TEST METHODS (U)  
IDENTIFIERS: \*HABITABILITY (U)

THE CIVIL DEFENSE RESEARCH STAFF OF THE  
UNIVERSITY OF GEORGIA CONDUCTED TWELVE SIMULATED  
COMMUNITY SHELTER OCCUPANCY TESTS DURING THE PERIOD  
1962-67. THE PRESENT REPORT IS A SYNTHESIS OF  
FINDINGS OF THE LARGE-GROUP STUDIES, RANGING IN  
NUMBERS OF PARTICIPANTS FROM 160-1,000 PERSONS, AND  
INVOLVING MEN, WOMEN, AND CHILDREN CONFINED FOR  
PERIODS VARYING FROM ONE DAY TO ONE WEEK.  
IMPLICATIONS FOR THE NATIONAL SHELTER PROGRAM  
ARE DISCUSSED, AS WELL AS RECOMMENDATIONS FOR FUTURE  
RESEARCH. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 688 249 7/3

PICATINNY ARSENAL DOVER N J FELTMAN RESEARCH LABS

THE KINETICS OF OXIDATION OF ISOPROPYL BENZENE BY  
MOLECULAR OXYGEN, (U)

MAY 69 14P PRIIMAN, R. ; PAALME, L. ;  
GUBERGRITS, M. ;  
MONITOR: PA TT-158

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF AKADEMIYA NAUK  
ESTONSKOI SSSR, TALLINN. IZVESTIYA. KHIMIYA I  
BIOLOGIYA, V16 N2 P116-120 1967.

DESCRIPTORS: (CUMENES, OXIDATION), REACTION KINETICS,  
FREE RADICALS, HYDROGEN PEROXIDE, ACETOPHENONES,  
CATALYSTS, WASTES(INDUSTRIAL), USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

IN ORDER TO DEVELOP THE METHODS OF REMOVING  
DETERGENT IMPURITIES AND ORIGINAL SUBSTANCES FROM THE  
WATERS AND TAILINGS OF CHEMICAL ENTERPRISES IT IS  
NECESSARY TO HAVE THE INFORMATION ABOUT THE KINETICS  
AND ABOUT THE ELEMENTARY MECHANISM OF THEIR OXIDATION  
UNDER NATURAL CONDITIONS--IN A NEUTRAL MEDIUM WITH  
MOLECULAR OXYGEN TAKING PART AT A COMPARATIVELY LOW  
TEMPERATURE AND IN THE ABSENCE OF CATALYTIC AGENTS.  
THIS REPORT DESCRIBES BRIEFLY THE RESULTS OF THE  
FIRST STAGE OF SUCH AN INVESTIGATION WHICH CARRIED  
OUT THE OXIDATION OF THE SIMPLEST REPRESENTATIVE OF  
THE ALKYL-AROMATIC HYDROCARBONS--ISOPROPYL BENZENE  
(CUMENE). (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 688 771 13/2  
WATER POLLUTION RESEARCH LAB STEVENAGE (ENGLAND)

WATER POLLUTION ABSTRACTS. VOLUME 42 NUMBER 1  
ABSTRACTS 1-225.

(U)

JAN 69 52P

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN HM STATIONARY OFFICE, 49  
HIGH HOLBORN, LONDON W.C.1 (ENGLAND). 5  
SHELLINGS NET. NO COPIES FURNISHED.

DESCRIPTORS: (WATER POLLUTION, ABSTRACTS), OXYGEN,  
CONTROL, WATER SUPPLIES, NATURAL RESOURCES, PROTECTION,  
EVAPORATION, HYGIENE, PESTICIDES, WASTES (SANITARY  
ENGINEERING), BACTERIA, DETECTION, MICROORGANISMS,  
ALGAE, MICROCOCCACEAE, PLANKTON, AQUATIC ANIMALS,  
PHOTOSYNTHESIS, GREAT BRITAIN

(U)

THE REPORT IS A COMPILATION OF ABSTRACTS ON  
CONSERVATION OF WATER RESOURCES; ANALYSIS AND  
EXAMINATION OF WATER AND WASTES; SEWAGE; TRADE WASTE  
WATERS; AND EFFECTS OF POLLUTION PREPARED BY THE  
WATER POLLUTION RESEARCH STAFF OF THE MINISTRY OF  
TECHNOLOGY, LONDON, ENGLAND.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 688 772 13/4  
WATER POLLUTION RESEARCH LAB STEVENAGE (ENGLAND)

WATER POLLUTION ABSTRACTS. VOLUME 42 NUMBER 3  
ABSTRACTS 432-652.

(U)

MAR 69 SUP

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN HM STATIONARY OFFICE, 49  
HIGH HOLBORN, LONDON W.C.1 (ENGLAND). 5  
SHILLINGS NET. NO COPIES FURNISHED.

DESCRIPTORS: (WATER POLLUTION, ABSTRACTS),  
PURIFICATION, HYDROLOGY, SEWAGE, WASTES (INDUSTRIAL),  
CONTROL, FLOODS, CLEANING COMPOUNDS, DAMS, INSECTICIDES,  
DEGRADATION, MICROBIOLOGY, OXIDATION, ION EXCHANGE,  
SOLIDS, REMOVAL, FERTILIZERS, DISPOSAL, GREAT BRITAIN (U)

THE REPORT IS A COMPILATION OF ABSTRACTS ON  
CONSERVATION OF WATER RESOURCES; ANALYSIS AND  
EXAMINATION OF WATER AND WASTES; SEWAGE; TRADE WASTE  
WATERS; AND EFFECTS OF POLLUTION PREPARED BY THE  
WATER POLLUTION RESEARCH STAFF OF THE MINISTRY OF  
TECHNOLOGY, LONDON, ENGLAND.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 692 203 13/2  
WATER POLLUTION RESEARCH LAB STEVENAGE (ENGLAND)

WATER POLLUTION ABSTRACTS. VOLUME 42 NUMBER 2  
ABSTRACTS 226-431.

(U)

FEB 69 SIP

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN HER MAJESTY'S STATIONARY  
OFFICE, 49 HIGH HOLBORN, LONDON, W.C.1  
(ENGLAND). 5 SHILLINGS NET. NO COPIES FURNISHED.  
SUPPLEMENTARY NOTE: SEE ALSO VOLUME 42 NUMBER 1, AD-  
688 771.

DESCRIPTORS: (•WATER POLLUTION, ABSTRACTS), WATER  
SUPPLIES, WASTES(SANITARY ENGINEERING), SEWAGE,  
WASTES(INDUSTRIAL), BIOLOGICAL CONTAMINATION, CHEMICAL  
CONTAMINATION, GREAT BRITAIN (U)

THE REPORT IS A COMPILATION OF ABSTRACTS ON:  
CONSERVATION OF WATER RESOURCES; ANALYSIS AND  
EXAMINATION OF WATER AND WASTES; SEWAGE; TRADE  
WASTE WATERS; AND EFFECTS OF POLLUTION. THE  
ABSTRACTS WERE PREPARED BY THE WATER POLLUTION  
RESEARCH STAFF OF THE MINISTRY OF TECHNOLOGY,  
LONDON, ENGLAND.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 694 536 15/3 13/2  
ENGINEERING-SCIENCE INC ARCADIA CALIF

WATER AND SANITATION SYSTEMS, POSTATTACK STUDY.  
VOLUME 1. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 69 105P ADAMS, LARRY W. JORGENSEN,  
ALFRED W. INOSANOV, MYRON E. I  
REPT. NO. ES-704  
CONTRACT: DAMC20-68-C-0172  
PROJ: OCD-34418

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NUCLEAR EXPLOSION DAMAGE, CIVIL DEFENSE),  
(\*CIVIL DEFENSE, SANITARY ENGINEERING), VULNERABILITY,  
RECOVERY, WATER SUPPLIES, SYSTEMS ENGINEERING,  
PERSONNEL, COMPUTER PROGRAMMING (U)  
IDENTIFIERS: POSTATTACK RECOVERY (U)

THE OBJECTIVE OF THE STUDY WAS TO DEVELOP AND TEST  
AN IMPROVED TECHNICAL BASIS FOR THE SELECTION AND  
ANALYSIS OF REPAIR AND RECOVERY METHODOLOGIES WHICH  
WILL ASSIST IN THE REESTABLISHMENT OF THE SANITARY  
ENVIRONMENT IN THE PERIOD AFTER A NUCLEAR ATTACK OR  
OTHER MAJOR DISASTER. IN ACCOMPLISHING THIS  
OBJECTIVE, THE SANITARY ENVIRONMENT CONTROL  
SYSTEMS OF DETROIT, MICHIGAN WERE UTILIZED TO  
TEST AND EVALUATE THE CONCEPTS AND METHODS DEVELOPED.  
THE CONCEPT OF VULNERABILITY IS EXPANDED TO INCLUDE  
NUMEROUS FACTORS IN ADDITION TO THE POTENTIAL DAMAGE  
TO PHYSICAL SYSTEM COMPONENTS, INCLUDING UTILITY  
ADMINISTRATION, OPERATIONAL SELF-SUFFICIENCY,  
COMMUNICATIONS, PLANNING FOR EMERGENCY OPERATION, AND  
LEVEL OF PERSONNEL TRAINING. GUIDELINES FOR  
DEVELOPING A COMPREHENSIVE VULNERABILITY RATING  
PROCEDURE ARE PRESENTED. A PROCEDURE, ENTITLED THE  
'RECOVERY TECHNIQUE EVALUATION,' HAS BEEN  
DEVELOPED TO BE UTILIZED IN DEFINING AND EVALUATING  
ALTERNATIVE POSTATTACK REPAIR AND RECOVERY  
STRATEGIES. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 696 867 13/2  
WATER POLLUTION RESEARCH LAB STEVENAGE (ENGLAND)

WATER POLLUTION ABSTRACTS. VOLUME 42 NUMBER 7  
ABSTRACTS 1278-1489.

(U)

JUL 69 52P

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN WATER POLLUTION ABSTRACTS,  
V42 N7 P289-336 JUL 69. NO COPIES FURNISHED.  
SUPPLEMENTARY NOTE: SEE ALSO AD-688 772.

DESCRIPTORS: (\*WATER POLLUTION, \*ABSTRACTS),  
PURIFICATION, WASTES(INDUSTRIAL), PETROLEUM PRODUCTS,  
DEGRADATION, PUBLIC HEALTH, CLEANING COMPOUNDS,  
INSECTICIDES, MICROBIOLOGY, OCEANS, DAMS, ESTUARIES,  
DISPOSAL, SEWAGE, RIVERS, FISHES, CHEMICAL PROPERTIES,  
STANDARDS, GREAT BRITAIN (U)  
IDENTIFIERS: BIODETERIORATION (U)

THE REPORT IS A COMPILATION OF ABSTRACTS ON  
CONSERVATION OF WATER RESOURCES; ANALYSIS AND  
EXAMINATION OF WATER AND WASTES; SEWAGE; TRADE WASTE  
WATERS; AND EFFECTS OF POLLUTION PREPARED BY THE  
WATER POLLUTION RESEARCH OF THE MINISTRY OF  
TECHNOLOGY, LONDON, ENGLAND.

(U)

AD-A041 950

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA  
ENVIRONMENTAL POLLUTION: SANITARY ENGINEERING AND INDUSTRIAL WA--ETC(U)  
JUL 77

F/G 13/2

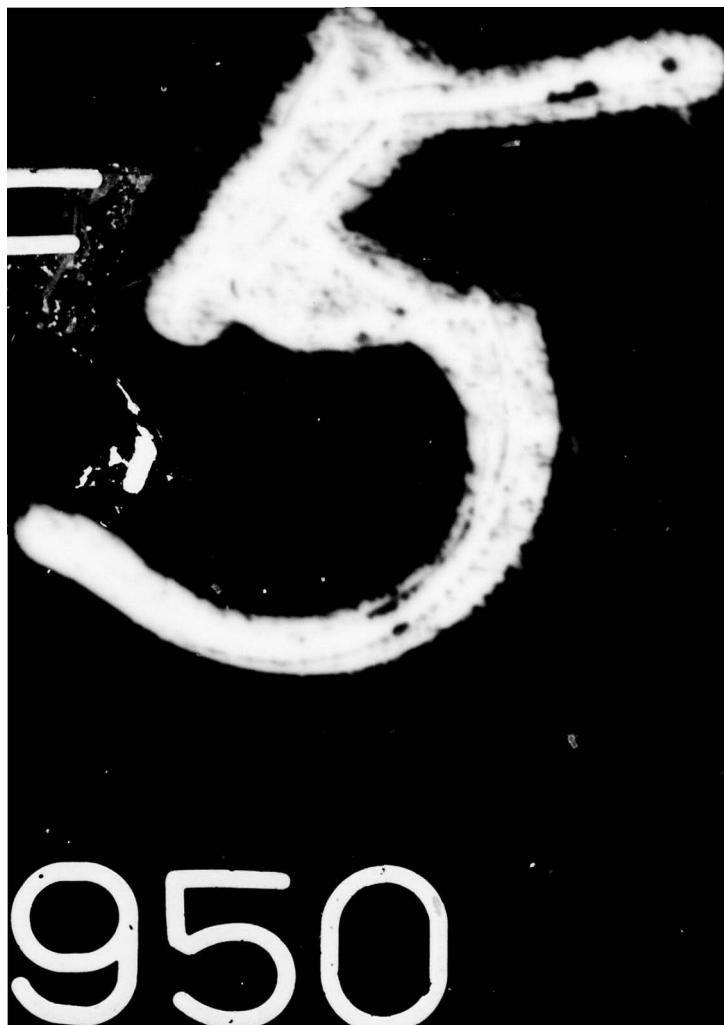
UNCLASSIFIED

DDC/BIB-77/09

NL

2 OF 5  
AD  
A041 950





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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 697 319 13/2 12/2  
PURDUE UNIV LAFAYETTE IND KRANNERT GRADUATE SCHOOL OF  
INDUSTRIAL ADMINISTRATION

SOME WELFARE PROBLEMS OF INTERTEMPORAL DECISION-  
MAKING;

(U)

SEP 69 52P LOEHMAN, EDNA ; WHINSTON,  
ANDREW ;  
CONTRACT: N00014-67-A-0226-0006  
PROJ: NR-047-068

UNCLASSIFIED REPORT  
PORTIONS OF THIS DOCUMENT ARE NOT FULLY LEGIBLE.

DESCRIPTORS: (\*CIVIL ENGINEERING, \*DECISION MAKING),  
(\*WATER POLLUTION, OPERATIONS RESEARCH),  
WASTES(INDUSTRIAL), MATHEMATICAL MODELS, MANAGEMENT  
PLANNING AND CONTROL, COSTS, STANDARDS, ECONOMICS,  
RIVERS, OPTIMIZATION (U)  
IDENTIFIERS: CONTROL THEORY, MAXIMUM PRINCIPLE,  
RESOURCE ALLOCATION, \*WATER TREATMENT (U)

THE PAPER IS CONCERNED WITH OPTIMAL DECISION-MAKING  
OVER TIME. THE TOOLS OF THE PONTRYAGIN MAXIMUM  
PRINCIPLE ARE USED TO INVESTIGATE THE CASE OF WATER  
POLLUTION. TWO PRODUCERS ON A STREAM, ONE UPSTREAM  
FROM THE OTHER, ARE CONSIDERED; THE UPSTREAM PRODUCER  
IS ASSUMED TO BE CAUSING DAMAGE TO THE OTHER. THE  
FIRST QUESTION CONSIDERED IS THE OPTIMAL ALLOCATION  
OF THE WATER RESOURCE BETWEEN THE TWO. TAXATION  
SCHEMES TO ACHIEVE THE OPTIMUM SOLUTION ARE DISCUSSED  
AND IT IS PROPOSED THAT WASTE DISPOSAL BE LIMITED BY  
LEGAL RESTRICTIONS. THIS SHOULD INDUCE COOPERATION  
BETWEEN THE FIRMS TO FINANCE A TREATMENT PLANT.  
THE RESULT IS THAT THE UPSTREAM FIRM IS ABLE TO  
PRODUCE AT A HIGHER LEVEL THAN THE LEVEL  
CORRESPONDING TO THE RESTRICTIONS ON HIS WASTE AND  
THE DOWNSTREAM FIRM OBTAINS WATER OF A HIGHER QUALITY  
THAN THE LEVEL CORRESPONDING TO THE RESTRICTIONS.  
THUS BOTH ARE BETTER OFF WHEN A JOINTLY FINANCED  
TREATMENT PLANT IS BUILT. THE MODEL CONSIDERED  
ANSWERS THE QUESTIONS OF THE OPTIMAL PLANT CAPACITY  
OVER THE TIME PERIOD AND HOW MUCH EACH FIRM SHOULD  
CONTRIBUTE TO RUNNING THE PLANT. THUS THE PAPER  
EXTENDS THE USUAL STATIC ANALYSIS OF OPTIMAL RESOURCE  
ALLOCATION AND IN ADDITION CONSIDERS OPTIMAL  
INVESTMENT OVER TIME. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 698 429 13/2  
WATER POLLUTION RESEARCH LAB STEVENAGE (ENGLAND)

WATER POLLUTION ABSTRACTS, VOLUME 42 NUMBER 10,  
ABSTRACTS 1906-2139.

(U)

OCT 69 52P

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN WATER POLLUTION  
ABSTRACTS, V42 N10 P433-480 OCT 69. NO COPIES  
FURNISHED.

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 42, NUMBER 7,  
AD-696 867.

DESCRIPTORS: (\*WATER POLLUTION, DOCUMENTS), ABSTRACTS,  
WATER, QUALITY CONTROL, WATER SUPPLIES, IRRIGATION  
SYSTEMS, AQUATIC ANIMALS, POISONING, BACTERIA, CHEMICAL  
ANALYSIS, WASTES(INDUSTRIAL), WASTES(SANITARY  
ENGINEERING), RADIOACTIVE CONTAMINATION, GREAT  
BRITAIN

(U)

IDENTIFIERS: DRINKING WATER, WATER CONSERVATION, WATER  
RESOURCES, WATER RECLAMATION

(U)

THE ABSTRACTS, WHICH ARE PUBLISHED MONTHLY, ARE  
PREPARED BY THE WATER POLLUTION RESEARCH STAFF  
OF THE MINISTRY OF TECHNOLOGY. AUTHOR AND  
SUBJECT INDEXES ARE PUBLISHED ANNUALLY AS A SEPARATE  
ISSUE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 698 452 13/4  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

COLD REGIONS SCIENCE AND ENGINEERING MONOGRAPH 3,  
SECTION C5B: SEWERAGE AND SEWAGE DISPOSAL IN  
COLD REGIONS, (U)

OCT 69 114P ALTER, AMOS J. ;  
REPT. NO. CRREL-CRSE-3-C5B  
PROJ: DA-1-T-062112-A-130

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*ARCTIC REGIONS),  
(\*WASTES(SANITARY ENGINEERING), DISPOSAL), (\*SEWAGE,  
DISPOSAL), CLASSIFICATION, PROBLEM SOLVING, COLLECTING  
METHODS, HANDLING, PROCESSING, THERMAL PROPERTIES,  
RECLAMATION, COSTS, SAFETY, PIPES (U)  
IDENTIFIERS: \*SEWAGE DISPOSAL (U)

THE MAIN ITEMS DEALT WITH IN THE MONOGRAPH ARE:  
PRACTICE AND PROBLEMS, COLLECTION AND TRANSPORT,  
TREATMENT AND PROCESSES, THERMOLOGY, RE-USE AND  
REGENERATIVE PROCESSES, AND CONSTRUCTION AND  
OPERATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 699 010 11/12  
FOREST PRODUCTS LAB MADISON WIS

USES FOR SAWDUST, SHAVINGS, AND WASTE  
CHIPS.

(U)

DESCRIPTIVE NOTE: FOREST SERVICE RESEARCH NOTE,  
NOV 69 48p HARKIN, JOHN M. ;  
REPT. NO. FSRN-FPL-0208

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WOOD, PARTICLES), COMMERCE,  
WASTES(INDUSTRIAL), STRUCTURAL MEMBERS, FUELS,  
AGRICULTURE, WOOD PULP, PROCESSING, BIBLIOGRAPHIES,  
REINFORCING MATERIALS

(U)

IDENTIFIERS: \*CHIPS, FIBERBOARDS, MULCHES, PARTICLE  
BOARDS, \*SAWDUST, \*SHAVINGS

(U)

THE REPORT SUMMARIZES CURRENT USES FOR WOOD  
RESIDUES AND PROVIDES SOURCES OF FURTHER INFORMATION  
ON AVAILABLE OUTLETS, PROCESSING METHODS, AND  
ECONOMIC CONSIDERATIONS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 699 337 13/13 8/12  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

COLD REGIONS SCIENCE AND ENGINEERING MONOGRAPH 3,  
SECTION A2D: UTILITIES ON PERMANENT SNOWFIELDS,

(U)

OCT 69 43P MELLOR, MALCOLM ;  
REPT. NO. CRREL-CRSE-3-A2D  
PROJ: DA-1-T-062112-A-130

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SNOW, CONSTRUCTION), (\*CONSTRUCTION,  
POLAR REGIONS), UNDERGROUND STRUCTURES, WATER SUPPLIES,  
SEWAGE, DISPOSAL, WASTES(SANITARY ENGINEERING),  
VENTILATION, HEATING, CARBON MONOXIDE, DESIGN, FIRE  
SAFETY, THERMAL INSULATION (U)

IDENTIFIERS: COLD WEATHER CONSTRUCTION (U)

THE TOPICS COVERED IN THE MONOGRAPH INCLUDE WATER  
SUPPLY, WASTE DISPOSAL, HEATING, VENTILATING AND FIRE  
PROTECTION AT INSTALLATIONS BUILT ON POLAR ICE  
SHEETS. THE SECTION ON WATER SUPPLY DISCUSSES  
ENERGY REQUIREMENTS, CONSUMPTION RATES, WATER QUALITY  
AND TREATMENT, TECHNIQUES AND EQUIPMENT FOR MELTING  
SNOW AND ICE, AND WATER DISTRIBUTION SYSTEMS. A  
NUMBER OF ACTUAL WATER SUPPLY SYSTEMS ARE DESCRIBED  
IN DETAIL. THE SECTION ON WASTE DISPOSAL DEALS  
WITH SEWAGE AND SEWAGE SINKS, LATRINES, GARBAGE,  
TRASH AND SCRAP AND RADIOACTIVE WASTE. EXAMPLES OF  
SANITATION SYSTEMS AT POLAR BASES ARE DESCRIBED IN  
SOME DETAIL. THE SECTION ON HEATING DISCUSSES  
HEATING LOAD, HEAT LOSSES AND INSULATION, ENERGY  
SOURCES, AND HEATING SYSTEMS. THE VENTILATION  
SECTION COVERS AIR DEMANDS, INTAKES AND EXHAUSTS,  
VENTILATION OF UNDERSNOW TUNNELS, AND CARBON MONOXIDE  
PROBLEMS. THE REPORT CONCLUDES WITH SOME NOTES ON  
FIRE PROTECTION. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 699 832 15/3

OHIO STATE UNIV COLUMBUS DISASTER RESEARCH CENTER

EMERGENCY ACTIONS AND DISASTER REACTIONS: AN  
ANALYSIS OF THE ANCHORAGE PUBLIC WORKS DEPARTMENT IN  
THE 1964 ALASKAN EARTHQUAKE, (U)

AUG 69 155P ADAMS, DAVID S. ;  
REPT. NO. DRC-MONOGRAPH SER-5  
CONTRACT: DCD-PS-64-46  
PROJ: DCD-2651E

UNCLASSIFIED REPORT

DESCRIPTORS: (EARTHQUAKES, ALASKA), (CIVIL DEFENSE,  
ANALYSIS), CIVIL DEFENSE, CIVILIAN PERSONNEL,  
MAINTENANCE, WATER SUPPLIES, DAMAGE, SEWAGE,  
ORGANIZATIONS, PUBLIC HEALTH, OPERATION, DECISION  
MAKING (U)  
IDENTIFIERS: ALASKAN EARTHQUAKE 1964 (U)

ON MARCH 27, 1964 ANCHORAGE, ALASKA WAS  
STRUCK BY AN EARTHQUAKE. BUILDINGS AND STREETS WERE  
DAMAGED AND ESSENTIAL WATER AND SEWER SERVICES  
DISRUPTED. WITHIN 27 HOURS OF THE IMPACT A  
DISASTER RESEARCH CENTER FIELD TEAM WAS  
DISPATCHED TO ANCHORAGE TO BEGIN A STUDY OF THE  
RESPONSE OF VARIOUS COMMUNITY ORGANIZATIONS TO THE  
DISASTER, A STUDY WHICH REQUIRED 6 SEPARATE FIELD  
TRIPS AND WAS CONCLUDED IN THE FALL OF 1965. A  
MAJOR PART OF THIS LONGITUDINAL STUDY CONCERNED THE  
DISASTER RESPONSES OF THE ANCHORAGE PUBLIC  
WORKS DEPARTMENT, THE MUNICIPAL AGENCY MOST  
INVOLVED IN MEETING THE EMERGENCY DEMANDS. SIXTY  
IN-DEPTH INTERVIEWS WERE CONDUCTED WITH MEMBERS OF  
THIS DEPARTMENT. THIS MONOGRAPH SUMMARIZES AND  
ANALYZES THIS INTERVIEW DATA. ADDITIONAL WRITTEN  
MATERIAL SUPPLEMENTS THIS DATA. THE ANALYSIS  
EMPLOYS TWO ANALYTICAL SCHEMES DEVELOPED AT DRC.  
ONE PROVIDES A FRAMEWORK FOR COMPARING  
ORGANIZATIONAL BEHAVIOR DURING 'NORMAL' TIME (TIME  
ONE) AND EMERGENCY (TIME TWO) OPERATIONS.  
THE OTHER SCHEME DISTINGUISHES AMONG FOUR TYPES OF  
ORGANIZATIONS COMPARING THEM BY THEIR STRUCTURE AND  
TASKS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 700 265 7/1 13/2  
NATIONAL RESEARCH COUNCIL OF CANADA OTTAWA (ONTARIO) DIV OF  
APPLIED CHEMISTRY

PERFORMANCE OF POROUS CELLULOSE ACETATE MEMBRANES  
FOR THE REVERSE OSMOSIS TREATMENT OF HARD AND WASTE  
WATERS. (U)

JUN 69 8P SOURIRAJAN, S. ; HAUCK, ANDREW  
R. ;  
MONITOR: NRC 10920

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN ENVIRONMENTAL SCIENCE AND  
TECHNOLOGY, V3 N12 P1269-1275 DEC 69. NO COPIES  
FURNISHED.

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH OTTAWA  
POLLUTION CONTROL CENTER (ONTARIO). REVISION OF  
REPORT DATED 24 OCT 68.

DESCRIPTORS: (\*WASTES(SANITARY ENGINEERING),  
\*MEMBRANES), (\*CELLULOSE ACETATES, OSMOSIS), (\*WATER  
POLLUTION, \*OSMOSIS), SEWAGE, WASTES(INDUSTRIAL),  
ELECTROPLATING, CANADA (U)  
IDENTIFIERS: WATER TREATMENT, \*REVERSE OSMOSIS,  
\*SEWAGE TREATMENT (U)

THE PERFORMANCE OF A FEW TYPICAL LOEB-  
SOURIRAJAN TYPE POROUS CELLULOSE ACETATE MEMBRANES  
IS REPORTED FOR THE TREATMENT OF HARD, POLLUTED, AND  
SEWAGE WATERS. THE MEMBRANES USED ARE SPECIFIED IN  
TERMS OF PURE WATER PERMEABILITY CONSTANT AND SOLUTE  
TRANSPORT PARAMETER FOR SODIUM CHLORIDE. USING  
FEED WATERS CONTAINING 300- TO 800-P.P.M. HARDNESS  
(EXPRESSED AS  $\text{CaCO}_3$ ), PRODUCT WATERS  
CONTAINING 2 P.P.M. OR LESS COULD BE OBTAINED WITH  
90% PRODUCT RECOVERY AND AN AVERAGE INITIAL FLUX OF  
38 GALLONS PER DAY PER SQ. FOOT AT 1000 P.S.I.G.  
THE POSSIBILITY OF PRODUCING 'ULTRAPURE' WATERS BY  
REPEATED REVERSE OSMOSIS PROCESSING IS INDICATED.  
THE SEPARATION OF COMMON POLLUTANTS SUCH AS  
NITRATES, BORATES, FLUORIDE, ALKYL BENZENE SULFONATE  
(ABS), AMMONIA, AND PHOSPHATES, AND A FEW OTHERS  
USUALLY PRESENT IN PLATING WASTES, AND THE  
APPLICABILITY OF THE REVERSE OSMOSIS PROCESS FOR THE  
TREATMENT OF SEWAGE WATERS AND WATER RENOVATION ARE  
ILLUSTRATED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 700 895 13/2  
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

CONSIDERATIONS ON A SEWER OUTFALL OFF NOBSKA  
POINT.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
DEC 69 42P BUMPUS, DEAN F. ; WRIGHT, W.  
REDWOOD ; VACCARO, RALPH F. ;  
REPT. NO. WHOI-REF-69-87  
CONTRACT: DOT-CG-92841, PHS-01-0015899

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SEWAGE, \*MASSACHUSETTS), DISPOSAL,  
ECOLOGY, WATER POLLUTION, BEACHES

(U)

THE EFFECTS OF PROSPECTIVE SECONDARY TREATMENT  
DOMESTIC SEWAGE EFFLUENT OF ABOUT 14 THOUSAND CU M  
PER DAY ON THE MARINE ENVIRONMENT OF MARTHA'S  
VINEYARD AND NANTUCKET SOUNDS HAS BEEN  
EXAMINED. A STEADY STATE CONDITION WOULD BE  
REACHED IN 75 DAYS WHEN THE SEWAGE EFFLUENT WOULD BE  
DILUTED BY A VOLUME RANGING FROM AT LEAST 1700 TO  
2800 PARTS OF REDWATER FOR EACH PART OF EFFLUENT.  
THE CONCENTRATIONS OF NUTRIENTS ADDED TO THE  
SOUNDS AND THE ECOLOGICAL EFFECTS WOULD BE LESS  
THAN IS EXPERIENCED IN THE NORMAL ANNUAL CYCLE.  
(AUTHOR)

(U)



UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 70J 388 13/2  
RAND CORP SANTA MONICA CALIF

ENVIRONMENTAL SIMULATION AS A TOOL IN A MARINE WASTE  
DISPOSAL STUDY OF JAMAICA BAY, (U)

MAR 70 IIP LEENDERTSE, J. J. ;  
REPT. NO. P-4163

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, \*ESTUARIES),  
(\*WASTES(SANITARY ENGINEERING), SIMULATION),  
MATHEMATICAL MODELS, NEW YORK, FLUID FLOW, PREDICTIONS,  
TRANSPORT PROPERTIES, MODELS(SIMULATIONS),  
TEMPERATURE (U)  
IDENTIFIERS: \*WASTE WATER (U)

THE STUDY OF TECHNICAL SOLUTIONS TO THE PROBLEM OF  
MANAGING FLUID WASTE DISCHARGES IN AN ESTUARY  
INVOLVES COMPLICATED RELATIONSHIPS, SUCH AS THOSE  
BETWEEN THE WASTE LOAD, THE LOCATION OF DISCHARGES,  
THE DEGREE OF TREATMENT, THE GEOMETRY OF THE ESTUARY,  
THE FLOW IN THE ESTUARY, AND THE TEMPERATURE.  
MODELS CAN BE BUILT TO PREDICT THE PROBABLE  
CONSEQUENCES OF EACH OF THE ALTERNATIVE SOLUTIONS  
CHOSEN. USING THE PREDICTIONS OBTAINED FROM THESE  
MODELS AND WHATEVER OTHER INFORMATION OR INSIGHT IS  
RELEVANT, ALTERNATIVES CAN BE COMPARED AND  
CONCLUSIONS DRAWN CONCERNING THE MOST DESIRABLE COURSE  
OF ACTION. SUCH A MODEL FOR WELL-MIXED ESTUARIES  
AND COASTAL SEAS IS PRESENTED AND DESCRIBED. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 704 209 6/10 13/2  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

DETERMINING THE CONCENTRATION OF OIL AEROSOLS IN THE  
AIR OF INDUSTRIAL INSTALLATIONS BY THE GRAVIMETRIC  
METHOD WITH THE AID OF FPP-15 FILTERS, (U)

JAN 70 8P LUTOV, V. A. ;  
REPT. NO. FTD-HT-23-642-69  
PROJ: FTD-6030201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF GIGIENA TRUDA I  
PROFESSIONALNYE ZABOLEVANIYA (USSR) V8 N2 P53-55 1964,  
BY L. THOMPSON.

DESCRIPTORS: (\*AIR POLLUTION, WASTES(INDUSTRIAL)),  
(\*AEROSOLS, GRAVIMETRIC ANALYSIS), FLUID FILTERS,  
COTTON, EFFECTIVENESS, FLUORESCENCE, USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

THE ARTICLE GIVES THE ADVANTAGES AND LIMITATIONS IN  
USING FPP 15 FILTERS TO DETERMINE THE CONCENTRATION  
OF OIL AEROSOLS IN THE AIR OF INDUSTRIAL  
INSTALLATIONS BY THE GRAVIMETRIC METHOD. THE  
EFFECTIVENESS OF THESE FILTERS IS COMPARED TO THAT OF  
COTTON FILTERS USED IN THE GRAVIMETRIC METHOD  
DEVELOPED BY A. N. ANISIMOV, AND TO THE  
EFFECTIVENESS OF THE FLUORESCENT METHOD.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 705 114 13/2  
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

CONSIDERATIONS ON INLAND SEWAGE DISPOSAL IN  
FALMOUTH, MASSACHUSETTS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
FEB 70 30P MEADE, ROBERT H. IVACCARO,  
RALPH F. ;  
REPT. NO. WHOI-REF-70-3  
CONTRACT: DOT-CG-92841, PHS-UI-00158

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*MASSACHUSETTS),  
(\*SEWAGE, DISPOSAL), WASTES(SANITARY ENGINEERING),  
NITRATES, PUBLIC HEALTH, WATER SUPPLIES (U)  
IDENTIFIERS: DRINKING WATER, SEWERS, SEWAGE TREATMENT,  
\*SEWAGE DISPOSAL, GROUND WATER (U)

THE TOWN OF FALMOUTH, MASSACHUSETTS, HAS  
EMPLOYED AN ENGINEERING FIRM TO DESIGN A SEWERAGE  
SYSTEM TO BE CONSIDERED BY THE TOWN FOR DISPOSAL OF  
DOMESTIC WASTES. IT HAS BEEN RECOMMENDED THAT A  
SEWAGE TREATMENT PLANT, WITH PRIMARY AND SECONDARY  
TREATMENT, BE LOCATED NEAR NOBSKA POINT, AND THAT  
THE TREATED EFFLUENT BE DISPOSED OF IN VINEYARD  
SOUND THROUGH A STRATEGICALLY LOCATED MARINE  
OUTFALL. AS POSSIBLE ALTERNATES TO THE PLANT NEAR  
NOBSKA POINT, WHITMAN AND HOWARD SUGGESTED  
TWO INLAND DISPOSAL SITES - ONE NEAR THE CORNER OF  
BRICK KILN AND SANDWICH ROADS AND THE OTHER  
ON BLACKSMITH SHOP ROAD NEAR THE TOWN DUMP.  
THESE INLAND PLANTS WOULD DISCHARGE SECONDARY  
TREATED EFFLUENT INTO THE GROUND THROUGH APPROPRIATE  
SAND FILTER BEDS. A GROUP OF INVESTIGATORS AT  
WOODS HOLE OCEANOGRAPHIC INSTITUTION HAS  
SUGGESTED AN OPTIMAL LOCATION FOR THE MARINE OUTFALL  
IN TERMS OF ITS POSSIBLE EFFECTS ON THE WATERS OF  
VINEYARD SOUND. THE REPORT IS A COMPANION TO  
THEIR REPORT, AND CONSIDERS THE CONSEQUENCES OF  
DISPOSING TREATED EFFLUENT AT THE ALTERNATIVE INLAND  
SITES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 705 688 13/2 7/4  
SVENSKA TRAFORSKNINGSINSTITUTET STOCKHOLM

COLORIMETRIC DETERMINATION OF HYDROGEN SULPHIDE  
AND METHANETHIOL IN INDUSTRIAL EFFLUENTS, (U)

OCT 68 6P BETHGE, PER OLOF ; CARLSON,  
MARGARETA ; RADESTROM, RUNE ;  
REPT. NO. MEDDELANDE 545

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN SVENSK PAPPERSTIDNING, V71  
N23 P864-868 1968. NO COPIES FURNISHED.  
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH SWEDISH  
FOREST PRODUCTS RESEARCH LAB., STOCKHOLM.

DESCRIPTORS: (\*WASTES (INDUSTRIAL), WATER POLLUTION),  
(\*SULFIDES, COLORIMETRIC ANALYSIS), (\*THIOLS,  
COLORIMETRIC ANALYSIS), (\*COLORIMETRIC ANALYSIS, \*WATER  
POLLUTION), ORGANIC SULFUR COMPOUNDS, SWEDEN (U)  
IDENTIFIERS: \*WATER POLLUTION DETECTION, \*MERCAPTAN/  
METHYL, \*HYDROGEN SULFIDE (U)

THE COLORIMETRIC DETERMINATION OF LOW  
CONCENTRATIONS OF HYDROGEN SULPHIDE AND SOLUBLE  
INORGANIC SULPHIDES IN EFFLUENTS HAS BEEN STUDIED.  
TO AVOID INTERFERENCES THE HYDROGEN SULPHIDE MUST  
BE STRIPPED FROM THE ACIDIFIED SAMPLE AND RE-ABSORBED  
IN AN ALKALINE SOLUTION. A SPECIAL APPARATUS HAS  
BEEN DESIGNED FOR THIS PURPOSE. THE POSSIBILITIES  
OF DETERMINING METHANETHIOL ON THE SAME SAMPLE HAVE  
BEEN INVESTIGATED. THE PRECISION AND ACCURACY WERE  
FOUND TO BE SATISFACTORY FOR THE HYDROGEN SULPHIDE  
DETERMINATION WHEREAS RESULTS FOR METHANETHIOL WERE  
LESS PRECISE OWING TO CERTAIN INTERFERENCES.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 706 206 13/8  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

DUST COLLECTING,

(U)

MAR 70 21P UZHUV, V. N. ;  
REPT. NO. FTD-MT-24-28-70  
PROJ: FTD-6030024

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF VSESUYUZNOE  
KHIMICHESKOE OBSHCHESTVO. ZHURNAL (USSR) V14 N4  
P432-437 1969, BY RAY E. ZARZA.

DESCRIPTORS: (\*AIR POLLUTION, \*WASTES (INDUSTRIAL)),  
(\*DUST, AIR POLLUTION), GAS FILTERS, ELECTROSTATIC  
PRECIPITATION, USSR

(U)

IDENTIFIERS: \*AIR POLLUTION CONTROL EQUIPMENT,  
SCRUBBERS, TRANSLATIONS, CYCLONE SEPARATORS, \*DUST  
COLLECTORS, ELECTROSTATIC PRECIPITATORS

(U)

THE ARTICLE DEALS WITH THE INDUSTRIAL PURIFICATION  
OF GASES IN ORDER TO DECREASE CONTAMINATION OF THE  
AIR, TO COLLECT VALUABLE PRODUCTS FROM GASES, AND TO  
REMOVE HARMFUL IMPURITIES FROM THEM. A BRIEF REVIEW  
IS PRESENTED OF THE NATURE AND SIZE OF PARTICLES TO  
BE REMOVED FROM THE GASES AND THE DETERMINATION OF  
EFFICIENCY OF DUST-CATCHING DEVICES. IN THE  
DISCUSSION DUST CATCHERS ARE BROKEN DOWN IN THE  
FOLLOWING GROUPS: (1) DRY OR MECHANICAL DUST  
CATCHERS; (2) WET DUST CATCHERS; (3) FILTERS;  
(4) ELECTRO-FILTERS. THE ARTICLE ENDS WITH A  
BRIEF NOTE CONCERNING THE EFFECTIVENESS OF COMBINED  
UNITS. THE ARTICLE CONTAINS A TABLE SHOWING THE  
TECHNICAL AND ECONOMIC INDICES OF THE MOST PREVALENT  
MODELS OF DUST CATCHERS. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 706 709 13/11 13/10  
COAST GUARD BALTIMORE MD FIELD TESTING AND DEVELOPMENT  
CENTER

SEWAGE PLANT GRINDER PUMP.

(U)

DESCRIPTIVE NOTE: FINAL REPT. ON PHASE 1,  
MAR 70 13P HALSTAD, O. M. ;  
REPT. NO. JSCG-506  
PROJ: CG-794105/015

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SEWAGE, DISPOSAL), (\*CENTRIFUGAL PUMPS,  
DESIGN), SHIPS, SEWAGE, DISPOSAL, IMPELLERS, GRINDERS,  
PERFORMANCE(ENGINEERING) (U)  
IDENTIFIERS: COAST GUARD CUTTERS (U)

EVALUATION OF A GRINDER PUMP AS AN IMPROVED MEANS  
OF WASTE SOLIDS COMMUNUTION. PERFORMANCE OF THE  
GRINDER PUMP COMPARED TO EXPANDED METAL SCREEN  
HYDRAULIC COMMUNUTOR IN ITS ABILITY TO BREAK UP WASTE  
SOLIDS. EFFICIENCY OF THE GRINDER PUMP SHOWN TO BE  
SUPERIOR TO EXPANDED METAL SCREEN HYDRAULIC  
COMMUNUTOR. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 706 931 13/2  
TRUESDAIL LABS INC LOS ANGELES CALIF

HUMAN WASTE SANITATION STUDIES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 4 APR 64-1 JUN 65.  
MAY 65 SOP BLOHM, CLYDE L. ;  
CONTRACT: DA-44-009-AMC-537(T)  
PROJ: UCD-OS-63-235

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FALLOUT SHELTERS, \*WASTES(SANITARY  
ENGINEERING)), ODORS, CONTROL, SODIUM COMPOUNDS,  
SULFATES, COPPER COMPOUNDS, OLEIC ACID, MINERAL OILS,  
CHEMICALS, COSTS (U)  
IDENTIFIERS: \*ODOR CONTROL, COPPER(II) SULFATE (U)

INVESTIGATIONS WERE MADE OF THE HANDLING AND  
STORAGE OF HUMAN WASTES AS THEY MIGHT BE ENCOUNTERED  
UNDER OCCUPANCY CONDITIONS IN OFFICE OF CIVIL  
DEFENSE FALLOUT SHELTERS. A CHEMICAL SANITIZING  
AND ODOR CONTROL AGENT HAS BEEN SELECTED FROM A  
NUMBER TESTED. THIS PREFERRED AGENT IS A SIMPLE  
PHYSICAL MIXTURE OF TWO PARTS SODIUM BISULFATE AND  
ONE PART COPPER SULFATE PENTAHYDRATE, USED IN THE  
WASTE CONTAINER AT THE CONCENTRATION OF ONE POUND PER  
TEN GALLONS (12,000 PPM) OF ACCUMULATED WASTES.  
ONE PINT OF OLEIC ACID (COMMERCIAL RED OIL) MAY  
OR MAY NOT BE USED AS A VAPOR BARRIER TO IMPROVE ODOR  
CONTROL. GENERAL CRITERIA HAVE BEEN ESTABLISHED FOR  
THE SPECIFICATION OF SUCH CONTROL AGENTS WHICH MAY BE  
OTHER THAN THE ONE SELECTED. DESIGN STUDIES WERE  
CONDUCTED FOR THE FABRICATION OF A SANITARY VAULT  
INTENDED FOR USE IN FALLOUT SHELTERS. THE VAULT IS  
EQUIPPED WITH TWO SEATS AND HAS A USEABLE FILL VOLUME  
OF 70 GALLONS OF MIXED WASTES. FOUR PROTOTYPE UNITS  
WERE CONSTRUCTED FOR TESTING. RECOMMENDATIONS FOR  
FURTHER WORK HAVE BEEN MADE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 707 888 6/3 8/1 5/3  
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
ROME (ITALY)

INTERNATIONAL FISHERIES AND MARINE POLLUTION, (U)

APR 67 24P JACKSON, ROY I. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN INTERNATIONAL CONFERENCE  
ON OIL POLLUTION OF THE SEA, ROME (ITALY) 7-9  
OCT 68, PAPER 1 P26-49. NO COPIES FURNISHED.

DESCRIPTORS: (\*FISHES, WATER POLLUTION), (\*INTERNATIONAL  
LAW, OCEANS), (\*WATER POLLUTION, OCEANS), PETROLEUM  
PRODUCTS, NATURAL RESOURCES, CHEMICALS, SHELLFISH,  
SOURCES, RADIOACTIVITY, WASTES (INDUSTRIAL), ESTUARIES,  
RIVERS, CONTROL, SYMPOSIA, ITALY (U)  
IDENTIFIERS: \*FISHERIES (U)

CONSIDERATION IS GIVEN TO THE INTERNATIONAL ASPECTS  
OF OCEANIC POLLUTION, AND A DESCRIPTION IS GIVEN TO  
THE SEQUENCY OF RELEVANT ACTIONS BY INTERNATIONAL  
ORGANIZATIONS, PARTICULARLY THOSE OF THE UNITED  
NATIONS FAMILY. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 708 234 13/2  
WATER POLLUTION RESEARCH LAB STEVENAGE (ENGLAND)

WATER POLLUTION ABSTRACTS. VOLUME 43 NUMBER 3  
ABSTRACTS 438-644. (U)

MAR 69 52P

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN WATER POLLUTION ABSTRACTS,  
V43 N3 P97-144 MAR 69. NO COPIES FURNISHED.  
SUPPLEMENTARY NOTE: SEE ALSO AD-696 867.

DESCRIPTORS: (•WATER POLLUTION, •ABSTRACTS),  
PURIFICATION, WASTES(INDUSTRIAL), PETROLEUM PRODUCTS,  
DEGRADATION, PUBLIC HEALTH, CLEANING COMPOUNDS,  
INSECTICIDES, OCEANS, SEA WATER, DAMS, ESTUARIES,  
DISPOSAL, SEWAGE, RIVERS, FISHES, CHEMICAL PROPERTIES,  
STANDARDS, GREAT BRITAIN (U)  
IDENTIFIERS: BIODETERIORATION (U)

THE REPORT IS A COMPILATION OF ABSTRACTS ON  
CONSERVATION OF WATER RESOURCES; ANALYSIS AND  
EXAMINATION OF WATER AND WASTES; SEWAGE; TRADE  
WASTE WATERS; EFFECTS OF POLLUTION PREPARED BY THE  
WATER POLLUTION RESEARCH OF THE MINISTRY OF  
TECHNOLOGY, LONDON, ENGLAND. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 708 667 13/13 15/3  
OFFICE OF CIVIL DEFENSE WASHINGTON D C

SHELTER DESIGN AND ANALYSIS. VOLUME 3.  
ENVIRONMENTAL ENGINEERING FOR SHELTERS.

(U)

MAY 69 282P  
REPT. NO. OCD-TR-20-VOL-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES REPORT DATED MAY 66.  
SEE ALSO VOLUME 1, AD-673 808.

DESCRIPTORS: (\*CIVIL DEFENSE, FALLOUT SHELTERS),  
(\*FALLOUT SHELTERS, SYSTEMS ENGINEERING), ENVIRONMENT,  
VENTILATION, HEAT TRANSFER, OXYGEN, GAS FILTERS,  
COOLING, POWER SUPPLIES, SANITARY ENGINEERING, LIFE  
SUPPORT, FALLOUT, PROTECTION, FOOD, FIRE SAFETY (U)  
IDENTIFIERS: \*HABITABILITY, \*ENVIRONMENTAL  
ENGINEERING (U)

THE TEXTBOOK PRESENTS THE ENGINEERING ASPECTS OF  
HABITABILITY CONSIDERATIONS FOR FALLOUT SHELTERS, AND  
CONFINES ITSELF TO BASIC THEORIES AND TECHNIQUES OF  
ENVIRONMENTAL CONTROL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 710 586 5/1  
RAND CORP SANTA MONICA CALIF

THE HEALTH-RELATED BUDGET OF LOS ANGELES COUNTY,  
FY1970,

(U)

JUL 70 11P BLUMENFELD, S. N. ;  
REPT. NO. P-4414

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PUBLIC HEALTH, \*BUDGETS), (\*CALIFORNIA,  
PUBLIC HEALTH), HOSPITALS, AIR POLLUTION, SANITARY  
ENGINEERING, WATER SUPPLIES, LIBRARIES, STATISTICAL  
ANALYSIS, COSTS

(U)

THE PURPOSE OF THIS PAPER IS TO SPOTLIGHT THE  
EXPECTED LEVEL OF SPENDING FOR THE CURRENT FISCAL  
YEAR BY THE COUNTY OF LOS ANGELES IN THE AREA  
OF HEALTH. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 710 623 6/11  
GENERAL ELECTRIC CO PHILADELPHIA PA SPACE DIV

WASTE MANAGEMENT SYSTEM FUNCTIONAL MODEL. (U)

DESCRIPTIVE NOTE: FINAL REPT. FEB-OCT 69,  
MAY 70 44p KATZ, JOSEPH R. ; MURRAY,  
ROBERT W. ;  
CONTRACT: F33615-69-C-1372  
PROJ: AF-6373  
MONITOR: AMRL TR-69-137

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WASTES(SANITARY ENGINEERING), COLLECTING  
METHODS), (\*SPACECRAFT, WASTES(SANITARY ENGINEERING)),  
STORAGE, MODELS(SIMULATIONS), DESIGN, SPACE BIOLOGY,  
SPACE FLIGHT (U)

A FUNCTIONAL MODEL FOR THE COLLECTION AND STORAGE  
OF FECAL WASTES IN A BIOLOGICALLY SAFE AND  
PSYCHOLOGICALLY ACCEPTABLE MANNER FOR AEROSPACE  
VEHICLES HAS BEEN DESIGNED, FABRICATED AND  
SUCCESSFULLY TESTED. THE DESIGN IS A COMMODE TYPE  
COLLECTOR SIMILAR TO THE PREVIOUSLY DEVELOPED 'DRY-  
JOHN SLINGER' SYSTEM; HOWEVER, THE NEW DESIGN  
EXTENDS THE USEFUL LIFE OF THE PREVIOUS UNIT BY USE  
OF A REPLACEABLE LINER. THE FUNCTIONAL MODEL  
PROVIDES VACUUM DRYING AND STORAGE OF 200 MAN-DAYS OF  
FECES AND TOILET TISSUE PRIOR TO LINER REPLACEMENT.  
EACH LINER CONTAINS A MOTOR-SLINGER AND AN AIR FLOW  
BACTERIA FILTER. THE FILTER PREVENTS CONTAMINATION  
OF ALL DOWNSTREAM LINES AND PERMITS CHANGING OF THE  
LINER WITHOUT CONTAMINATION OF THE CABIN. THE FULL  
LINER CAN BE SEALED AND STORED WHILE THE NEW LINER  
FUNCTIONS FOR AN ADDITIONAL 200 MAN DAYS; THUS, THE  
USEFUL LIFE OF THE BASIC HARDWARE IS GOVERNED BY THE  
NUMBER OF AVAILABLE LINER ASSEMBLIES, AND CABIN  
STORAGE. ADDITIONAL FEATURES OF THE FUNCTIONAL  
MODEL ARE A QUICK ACTING SLIDE VALVE ASSEMBLY TO OPEN  
AND CLOSE THE COMMODE, PROVISION FOR FECES SAMPLING  
AND A SUBASSEMBLY FOR DISPENSING A DISINFECTANT ONTO  
THE FECES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 715 024 13/2  
TEXAS UNIV AUSTIN

PROCESS MODELING OF BIOLOGICAL WASTE  
TREATMENT.

(U)

DESCRIPTIVE NOTE: ANNUAL PROGRESS REPT. NO. 1, 1 FEB-15  
OCT 69:

OCT 69 15P HIMMELBLAU, D. M. ; GLOYNA,

E. F. ;

CONTRACT: DADA17-69-C-9073

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SEWAGE, PROCESSING), TRACER STUDIES,  
RADIOACTIVE ISOTOPES, GAS FLOW, AIR, MATHEMATICAL  
ANALYSIS

(U)

IDENTIFIERS: \*AEROBIC PROCESSES, \*AERATION, \*SEWAGE  
TREATMENT

(U)

THE REPORT DESCRIBES THE WORK UNDERTAKEN TO  
REPRESENT AND IDENTIFY MATHEMATICAL MODELS OF  
BIOLOGICAL WASTE TREATMENT AS APPLIED TO A LABORATORY  
SIZED AERATION BASIN. PULSE INPUTS OF RADIOACTIVE  
SODIUM-24 HAVE BEEN USED TO OBTAIN RESIDENCE TIME  
DISTRIBUTION CURVES (IMPULSE RESPONSE CURVES) FOR  
THE BASIN. AT ALL REASONABLE AIR FLOW RATES WHICH  
WOULD SUPPORT A BIOMASS, THE TANK APPEARS TO BE WELL  
MIXED AS MIGHT BE EXPECTED. REPRODUCIBLE  
EXPERIMENTAL DATA ARE EASY TO OBTAIN, AND THE BASIN  
PARAMETERS COMPUTED FROM THE DATA AGREE WELL WITH THE  
KNOWN PARAMETERS. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 715 286 6/11  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

LOW TEMPERATURE CATALYTIC OXIDATION OF  
WASTE WATER VAPORS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
68 17P METZGER, COURTNEY A. ; HEARLD,  
ALBERT B. ; REYNOLDS, BOBBY J. ; McMULLEN,  
BOBBY G. ; THOMAS, WILLIAM H. ;  
REPT. NO. AMRL-TR-68-48  
PROJ: AF-6373  
TASK: 637304

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CONFINED ENVIRONMENTS, WATER SUPPLIES),  
(\*URINE, \*WATER SUPPLIES), (\*WASTES(SANITARY  
ENGINEERING), PURIFICATION), DISTILLATION, CATALYSTS,  
OXIDATION, TEST METHODS (U)  
IDENTIFIERS: \*WATER TREATMENT (U)

BASED ON RESEARCH AND TESTING OF SEVERAL WATER  
RECOVERY PROCESSES, THE CATALYTIC OXIDATION OF WASTE  
WATER VAPORS (AFTER VACUUM DISTILLATION) TO  
ELIMINATE TRACE ORGANIC ENTRAINMENT SHOWS GOOD  
PROMISE FOR A WATER RECLAMATION SYSTEM FOR AEROSPACE  
MISSIONS. THIS REPORT SUMMARIZES THE RESULTS OF  
RESEARCH AND THE DESIGN AND DEVELOPMENT OF TWO  
SYSTEMS. THE CATALYTIC OXIDATION UNIT FOR BOTH  
SYSTEMS IS OPERATED AT LOW TEMPERATURES (300 F  
VERSUS PAST OPERATING TEMPERATURES IN THE 1200 F  
RANGE). THIS IS THE FIRST KNOWN DEVELOPMENT OF A  
SATISFACTORY LOW TEMPERATURE CATALYTIC UNIT  
INTEGRATED WITH A VACUUM DISTILLATION WATER  
RECLAMATION SYSTEM. ALSO DISCUSSED IS THE USE OF  
RADIOISOTOPES FOR THE THERMAL ENERGY. ONE SYSTEM  
USES THE VACUUM OF SPACE TO FACILITATE DISTILLATION  
OF THE WATER AND TRANSPORT OF LIQUIDS AND VAPORS.  
ELECTRONIC CONTROLS AND ELECTRICAL ENERGY DEMAND  
ARE HELD TO A MINIMUM. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 715 726 13/2  
TEXAS UNIV AUSTIN CENTER FOR RESEARCH IN WATER  
RESOURCES

PROCESS MODELING OF BIOLOGICAL WASTE  
TREATMENT.

(U)

DESCRIPTIVE NOTE: ANNUAL PROGRESS REPT. NO. 2, 1 FEB-10  
OCT 70,

OCT 70 16P HIMMELBLAU, D. M. ; GLOYNA,

E. F. ;

CONTRACT: DADA17-69-C-9073

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO ANNUAL PROGRESS REPT. NO.  
1, AD-715 024.

DESCRIPTORS: (\*SANITARY ENGINEERING, SEWAGE),  
MATHEMATICAL MODELS, PERFORMANCE(ENGINEERING), TRACER  
STUDIES, FLUID FLOW (U)

IDENTIFIERS: AERATION, \*ACTIVATED SLUDGE PROCESS,  
AEROBIC PROCESSES, \*SEWAGE TREATMENT (U)

THE REPORT DESCRIBES THE WORK UNDERTAKEN TO  
REPRESENT AND IDENTIFY MATHEMATICAL MODELS OF  
BIOLOGICAL WASTE TREATMENT AS APPLIED TO LABORATORY  
SIZED AERATION BASINS. PULSE INPUTS OF RADIOACTIVE  
SODIUM-24 HAVE BEEN USED TO OBTAIN RESIDENCE TIME  
DISTRIBUTION CURVES (IMPULSE RESPONSE CURVES) FOR  
THE BASINS. REPRODUCIBLE EXPERIMENTAL DATA ARE EASY  
TO OBTAIN, AND THE BASIN PARAMETERS COMPUTED FROM THE  
DATA AGREE WELL WITH THE KNOWN PARAMETERS IF CARE IS  
TAKEN TO USE EXPERIMENTAL DATA FOR PERIODS LONGER  
THAN 8-10 RESIDENCE TIMES. OTHERWISE, THE DATA CAN  
BE MISLEADING. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 716 199 13/10 13/2  
COAST GUARD BALTIMORE MD FIELD TESTING AND DEVELOPMENT  
CENTER

MODIFIED 50-MAN VALDESPINO SHIPBOARD SEWAGE  
TREATMENT SYSTEM.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 70 22P HALSTAD, O. M. ; O'CONNELL,  
J. M. ;  
REPT. NO. USCG-523  
PROJ: CG-714121/101

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*SHIPS), (\*SEWAGE,  
SHIPBOARD), LIQUID FILTERS, FAILURE, FLUID FLOW, SOLIDS,  
CHLORINATION, TEST METHODS (U)

IDENTIFIERS: AEROBIC PROCESSES, AERATION TANKS,  
\*SEWAGE TREATMENT, EVALUATION (U)

THE EVALUATION OF A PROPRIETARY SHIPBOARD WASTE  
TREATMENT SYSTEM IS DESCRIBED. THE SUBJECT OF THE  
EXPERIMENT WAS THE MODIFIED VERSION OF VACUUM-  
AERATION SYSTEM NOW UNDERGOING EVALUATION ON A  
COAST GUARD SHIP. A PRINCIPAL FEATURE OF THE  
MODIFIED VERSION WAS THE INCLUSION OF A BACK-FLUSH  
FILTER IN THE DISCHARGE LINE FROM THE AERATION  
CHAMBER. RESULTS ARE REPORTED. ALSO REPORTED  
IS A BRIEF DESCRIPTION OF EXPLORATORY ALTERNATIVE  
METHODS FOR SEPARATING SOLIDS FROM LIQUID WASTES IN A  
SHIPBOARD SEWAGE TREATMENT SYSTEM. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 717 239 13/2  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

SETTLING CHARACTERISTICS OF ACTIVATED SLUDGE  
AT LOW TEMPERATURE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
NOV 70 33P REED, SHERWOOD ;  
REPT. NO. CRREL-TR-203

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SEWAGE, \*ARCTIC REGIONS), CHEMICAL  
PRECIPITATION, MATHEMATICAL ANALYSIS, DESIGN (U)  
IDENTIFIERS: \*ACTIVATED SLUDGE PROCESS,  
\*CLARIFICATION, \*SEWAGE TREATMENT, SETTLING (U)

A SERIES OF ACTIVATED SLUDGE SETTLING TESTS WERE  
OBSERVED WITH PARTICLE CONCENTRATION AND TEMPERATURE  
AS THE CONTROLLED VARIABLES. BASED ON THE  
EXPERIMENTAL DATA, AN EQUATION DEFINING SETTLING  
VELOCITY IN TERMS OF CONCENTRATION, FLUID  
TEMPERATURE, AND ORGANIC LOADING WAS DEVELOPED.  
ALTHOUGH EMPIRICAL IN NATURE THE EQUATION PROVIDES  
A RATIONAL BASIS FOR THE DETERMINATION OF TEMPERATURE  
INFLUENCE AND SHOULD HAVE SPECIAL VALUE FOR COLD  
REGIONS DESIGNS. IT WAS POSSIBLE TO DESCRIBE THE  
RESULTS OF OTHER INVESTIGATIONS WITH THIS EQUATION.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 717 241 13/2  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

A RATIONAL APPROACH TO THE DESIGN OF AERATED  
SEWAGE LAGOONS.

(U)

DESCRIPTIVE NOTE: SPECIAL REPT.,  
OCT 70 28P POHL, EDWARD F. ;  
REPT. NO. CRREL-SR-136  
PROJ: DA-1-T-062112-A-130  
TASK: 1-T-062112-A-13001

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SEWAGE, \*ARCTIC REGIONS), MILITARY  
FACILITIES, OXYGEN, DESIGN

(U)

IDENTIFIERS: \*AERATION, \*ACTIVATED SLUDGE PROCESS,  
\*BIOCHEMICAL OXYGEN DEMAND, SECONDARY SEWAGE  
TREATMENT, \*SEWAGE TREATMENT, LAGOONS(PONDS)

(U)

THE USE OF AERATED LAGOONS AS AN ECONOMICAL SEWAGE  
TREATMENT SYSTEM IS A RECENTLY DEVELOPED CONCEPT.  
ITS ADAPTABILITY TO ARCTIC AND SUBARCTIC  
ENVIRONMENTS HAS BEEN ESTABLISHED THROUGH TEST  
PROGRAMS IN ALASKA. THE REPORT SUMMARIZES  
CURRENT DEVELOPMENTS AND DISCUSSES THE PHYSICAL AND  
BIOCHEMICAL PARAMETERS WHICH MUST BE CONSIDERED  
DURING DESIGN. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 717 348 6/20 13/2  
NAVAL RESEARCH LAB WASHINGTON D C

HEXAVALENT CHROMIUM: TOXICOLOGICAL EFFECTS  
AND MEANS FOR REMOVAL FROM AQUEOUS  
SOLUTION.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,  
JAN 71 21P SHEPHERD, C. M. ; JONES, R.  
L. ;  
REPT. NO. NRL-7215  
PROJ: SF51-542-601, NRL-M04-01

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CHROMIUM COMPOUNDS, \*TOXICITY), (\*WATER  
POLLUTION, \*CHROMATES), PLANTS(BOTANY), ANIMALS,  
ECOLOGY, WASTES(INDUSTRIAL), REVIEWS, REMOVAL, NAVY, ION  
EXCHANGE (U)

IDENTIFIERS: \*WATER TREATMENT, \*CONTROL, \*WATER  
POLLUTION, \*CHEMICAL REMOVAL(WATER TREATMENT),  
INDUSTRIAL WASTE TREATMENT (U)

THERE HAS BEEN CONCERN RECENTLY OF THE POSSIBILITY  
OF LONG-TERM DISTURBANCES OF THE ENVIRONMENTAL  
ECOLOGY BY HEXAVALENT CHROMIUM DISCHARGED IN  
INDUSTRIAL AND, IN SOME CASES, NAVAL WASTE WATERS.  
TO AID IN THE ASSESSMENT OF THESE POTENTIAL  
DANGERS, THE LITERATURE WAS SURVEYED TO PROVIDE A  
PERSPECTIVE OVERVIEW OF THE TOXICITIES OF HEXAVALENT  
CHROMIUM TOWARD PLANT AND ANIMAL. THE MEANS  
AVAILABLE FOR REDUCING CHROMATE CONCENTRATIONS IN  
WASTE WATERS TO ppm LEVELS WERE REVIEWED FOR  
SUITABILITY FOR NAVY USAGE. THE TECHNIQUES  
CONSIDERED WERE CHEMICAL REDUCTION, WITH SUBSEQUENT  
PRECIPITATION OF THE TRIVALENT CHROMIUM PRODUCT; ION  
EXCHANGE; DIRECT PRECIPITATION; ION FLOTATION;  
ELECTROCHEMICAL REDUCTION; AND ELECTRODIALYSIS.  
BACKGROUND AND ORIENTATIONAL INFORMATION ARE  
FURNISHED FOR USE IN CONSIDERING NAVY CHROMATE  
POLLUTION PROBLEMS AND THEIR RECTIFICATION.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 718 467 13/10 13/2  
COAST GUARD WASHINGTON D C APPLIED TECHNOLOGY DIV

SHORE EVALUATION OF A PROPRIETARY 10-20 MAN  
WASTE TREATMENT SYSTEM DESIGNED FOR  
SHIPBOARD USE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
FEB 71 21P SCALLER, CARL L. ISCARANO,  
THOMAS S. ;  
REPT. NO. USCG-714122/100  
PROJ: CG-714122

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHIPS, SANITARY ENGINEERING), FLUID  
FILTERS, ADSORPTION, CARBON, OXIDATION, WASTES (SANITARY  
ENGINEERING) (U)

IDENTIFIERS: AEROBIC PROCESSES, BIOCHEMICAL OXYGEN  
DEMAND, SEWAGE TREATMENT (U)

A SHORE TEST PROGRAM WAS CONDUCTED TO DETERMINE THE  
EFFECTIVENESS OF A PROPRIETARY 10-20 MAN TREATMENT  
SYSTEM DESIGNED FOR SHIPBOARD USE. THE SYSTEM  
INVESTIGATED MADE USE OF ACTIVATED CARBON FOR THE  
PURPOSE OF FILTRATION/ADSORPTION AND BIO-OXIDATION OF  
SANITARY WASTES. INFLUENT AND EFFLUENT WASTE  
PROPERTIES WERE DETERMINED. PHYSICAL MODIFICATIONS  
WERE ACCOMPLISHED TO CONVERT THE MODE OF OPERATION  
FROM AEROBIC-ANAEROBIC FILTRATION/DIGESTION TO  
AEROBIC FILTRATION/DIGESTION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 720 183 13/2  
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

THE ROLE OF PRIMARY PRODUCTION IN SOLVING  
PROBLEMS OF HYDROBIOLOGICAL PROCESSES AND THE  
MEANS OF CONTROLLING THEM (ROL PERVICHNOI  
PRODUKTSII V RESHENII PROBLEMY  
GIDROBIOLOGICHESKIKH PROTSESSOV I PUTEI  
UPRAVLENIYA IMI), (U)

63 7P ZHADIN, V. I. ;  
REPT. NO. NOO-TRANS-199

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. ON MONO. PERVICHNAYA  
PRODUKTSIYA MOREI I VNUTRENNIKH VOD, MINSK, 1961  
P7-10, BY M. SLESSERS. ALSO AVAILABLE AS IT-63-  
23800.

DESCRIPTORS: (\*WATER POLLUTION, \*PLANKTON), FOULING,  
BIOLOGICAL CONTAMINATION, HYDRAULIC EQUIPMENT, CONTROL,  
SANITARY ENGINEERING, USSR (U)  
IDENTIFIERS: \*PRIMARY BIOLOGICAL PRODUCTIVITY,  
TRANSLATIONS (U)

THE PAPER DISCUSSES THE EFFECT OF PRIMARY  
PRODUCTION AND BIOLOGICAL CONTAMINATION OF WATER  
BASINS, WHICH CAUSES POLLUTION OF WATER AND FOULING  
ON VESSELS, WATER PIPES AND HYDRAULIC STRUCTURES.  
THE PROBLEMS ARISING FROM THE PHENOMENA AND THE  
MEASURES AIMED AT LESSENING OR ELIMINATING THEIR  
NEGATIVE EFFECT ON NATIONAL ECONOMY AND SANITARY  
CONDITIONS ARE SINGLED OUT, INDICATING THE NEED FOR  
SPECIAL ORGANIZATIONS AND INSTITUTES THAT WOULD  
CONTRIBUTE TO THE SOLUTION OF THE COMPLEX PROBLEMS.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 720 391 6/6 13/2  
WORKING GROUP ON PESTICIDES ROCKVILLE MD

SUMMARY OF INTERIM GUIDELINES FOR DISPOSAL OF  
SURPLUS OR WASTE PESTICIDES AND PESTICIDE  
CONTAINERS.

(U)

DEC 70 30P  
REPT. NO. WGP-DS-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PESTICIDES, DISPOSAL), (\*CONTAINERS,  
PESTICIDES), WASTES(INDUSTRIAL), WASTES(SANITARY  
ENGINEERING), WATER POLLUTION, INCINERATORS, FIRE  
SAFETY, CONTAMINATION, PUBLIC HEALTH

(U)

AN INTERIM GUIDELINE FOR SURPLUS OR WASTE  
PESTICIDES AND PESTICIDE CONTAINER DISPOSAL HAS BEEN  
DRAWN FROM THE COMBINED IMPORTANT POINTS OF THREE  
WORKING GROUP REPORTS. PRESENTED IN CONCISE  
FORM FOR READY REFERENCE, THE SUBJECTS OF OCEAN  
DISPOSAL (NOT RECOMMENDED), GROUND DISPOSAL AND  
INCINERATION (AIR DISPOSAL) ARE REVIEWED.  
ORIENTATION IS TO DIFFERENT PESTICIDE USERS:  
HOUSEHOLDERS, FARM OPERATORS, COMMERCIAL OPERATORS,  
GOVERNMENTAL AUTHORITIES, INDUSTRIAL USERS,  
FORMULATORS, MANUFACTURERS. GROUND DISPOSAL, ITS  
ATTENDANT PRECAUTIONS AND CONTROLS, ARE DISCUSSED AS  
WELL AS METHODS AND DISPOSAL SITE REQUIREMENTS.  
INCINERATION TECHNOLOGY TO DATE IS OUTLINED AS THE  
MOST APPLICABLE METHOD OF DISPOSAL FOR LARGE AMOUNTS  
OF TOXIC WASTES AND UNUSABLE PESTICIDES. SECTIONS  
ON COLLECTION SYSTEMS AS PRACTICED AND RECOMMENDED IN  
VARIOUS AREAS INCLUDING TRANSPORTATION OF SURPLUS  
PESTICIDES AND CONTAINERS, STORAGE CONSIDERATIONS  
WITH FIRE AND SAFETY PRECAUTIONS, DISPOSAL SITE  
MONITORING AND SUGGESTED RESEARCH BRING THE WHOLE  
PROBLEM INTO FOCUS. THE SUMMARY OF GUIDELINES  
PROVIDES PRELIMINARY GUIDANCE WITH EXPECTATION OF  
REVISION WHEN MORE DEFINITIVE SOLUTIONS ARE  
AVAILABLE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 722 791 13/2 6/6 8/1  
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

THE MARINE DISPOSAL OF SEWAGE SLUDGE AND  
DREDGE SPOIL IN THE WATERS OF THE NEW YORK  
BIGHT,

(U)

JAN 71 163P HORNE, R. A. ; MAHLER, A.  
J. ; ROSSELLO, R. C. ;  
CONTRACT: DACW72-70-C-0030

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, \*SEWAGE), (\*MARINE  
BIOLOGY, WATER POLLUTION), (\*NEW YORK, WATER POLLUTION),  
OCEAN CURRENTS, SALINITY, NITRATES, PHOSPHATES, METALS,  
HYDROCARBONS, PESTICIDES, FISHES, SHELLFISH, TOXICITY,  
ECOLOGY (U)

IDENTIFIERS: \*WATER POLLUTION EFFECTS(PLANTS), \*WATER  
POLLUTION EFFECTS(ANIMALS), \*WASTE DISPOSAL, NEW  
YORK(NEW YORK), \*SLUDGE DISPOSAL, \*SOLID WASTE  
DISPOSAL (U)

THE DUMPING OF SEWER SLUDGE AND DREDGE SPOIL IN THE  
WATERS OF THE NEW YORK BIGHT AND THE EFFECT OF  
THIS WASTE DISPOSAL PRACTICE ON THE MARINE  
ENVIRONMENT IS REVIEWED. THE QUANTITIES AND  
COMPOSITION OF THESE WASTES ARE DESCRIBED, TOGETHER  
WITH THEIR PHYSICAL, CHEMICAL AND BIOLOGICAL EFFECTS  
ON THE ENVIRONMENT. AT THE CENTER OF THE SLUDGE  
DUMP, THE BEARING CAPACITY OF THE WATERS HAS BEEN  
EXCEEDED, AND AN ANOXIC BOTTOM AREA DEVOID OF LIFE  
FORMED. BOTH SPOIL AND SLUDGE CONTAIN LARGE  
QUANTITIES OF TOXIC HEAVY METALS, AND THE SPOIL ALSO  
CONTAINS LARGE QUANTITIES OF PETROCHEMICALS AND  
PESTICIDES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 723 431 6/6 13/2  
STATE UNIV OF NEW YORK STONY BROOK MARINE SCIENCES  
RESEARCH CENTER

SURVEY OF MARINE WASTE DEPOSITS, NEW YORK  
METROPOLITAN REGION.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.:  
APR 71 78P GROSS, M. GRANT ; BLACK, JOHN  
A. ; KALIN, ROBERT J. ; SCHRAMMEL, JAMES R. ;  
SMITH, RAYMOND N. ;  
REPT. NO. TR-8  
CONTRACT: DACW72-70-C-0009, PHS-EC-00388-02

UNCLASSIFIED REPORT

DESCRIPTORS: (\*URBAN AREAS, \*WATER POLLUTION), (\*METALS,  
WATER POLLUTION), (\*MARINE BIOLOGY, WATER POLLUTION),  
WASTES (SANITARY ENGINEERING), NEW YORK, CHROMIUM,  
COPPER, LEAD (METAL), SILVER, ECOLOGY, HARBORS, TOXICITY,  
ATOMIC SPECTROSCOPY, SEDIMENTATION, AQUATIC ANIMALS (U)  
IDENTIFIERS: WATER ANALYSIS, \*NEW YORK CITY (NEW YORK),  
BENTHOS, \*SOLID WASTE DISPOSAL (U)

THE REPORT DISCUSSED 122 SQUARE MILES SURVEYED TO  
DETERMINE DISTRIBUTION OF WASTE DEPOSITS IN NEW  
YORK BIGHT, AND THE TOTAL CARBON CONTENTS AND  
LOSS-ON-IGNITION (VOLATILE MATTER). SAMPLE  
CONCENTRATIONS OF CHROMIUM, COPPER, LEAD AND SILVER,  
WERE COMPARED TO THE DISTRIBUTION OF CARBON-RICH  
DEPOSITS ON THE CONTINENTAL SHELF. ATOMIC  
ABSORPTION SPECTROMETRIC ANALYSES WAS USED ON ACID-  
EXTRACTABLE MINOR ELEMENTS IN WASTE DEPOSITS. FEW  
GROUPS OF POLLUTION-TOLERANT ORGANISMS WERE ABUNDANT  
IN SEDIMENTS FROM THE INNER PORTIONS OF THE NEW  
YORK HARBOR. NO LIVING FORAMINIFERA WERE FOUND  
IN SEDIMENT FROM THE EAST RIVER. A FEW SPECIES  
WERE FOUND IN WESTERN LONG ISLAND SOUND.  
OSTRACODS WERE RARE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 723 506 13/2  
WATER POLLUTION RESEARCH LAB STEVENAGE (ENGLAND)

WATER POLLUTION ABSTRACTS. VOLUME 43,  
NUMBER 4, ABSTRACTS 645-849.

(U)

APR 70 52P

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN WATER POLLUTION  
ABSTRACTS, V43 N4 P145-192 APR 70. NO COPIES  
FURNISHED BY DDC OR NTIS.

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 31 MAR 69,  
AD-708 234.

DESCRIPTORS: (\*WATER POLLUTION, \*ABSTRACTS),  
PURIFICATION, WASTES(INDUSTRIAL), CONTROL, SEWAGE, WATER  
SUPPLIES, PUBLIC HEALTH, PETROLEUM PRODUCTS,  
DEGRADATION, DAMS, ESTUARIES, PLANKTON, PHOTOSYNTHESIS,  
VIRUSES, SEA WATER, MICROBIOLOGY, GREAT BRITAIN (U)  
IDENTIFIERS: WATER, WATER TREATMENT, GROUND WATER (U)

THE REPORT IS A COMPILATION OF ABSTRACTS ON  
CONSERVATION OF WATER RESOURCES; ANALYSIS AND  
EXAMINATION OF WATER INVESTIGATIONS; WATER  
POLLUTION CONTROL MEASURES; SURFACE AND GROUND  
WATER DEVELOPMENT; POLLUTION EFFECTS PREPARED BY  
THE WATER POLLUTION RESEARCH OF THE MINISTRY OF  
TECHNOLOGY, LONDON, ENGLAND.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 723 789 13/2 13/10  
COAST GUARD WASHINGTON D C APPLIED TECHNOLOGY DIV

EVALUATION OF A PROPRIETARY WASTE TREATMENT  
SYSTEM ABOARD THE USCGC ALERT (WMEC-630)  
BASED AT CAPE MAY, NEW JERSEY.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAY 71 32P SCHALLER, C. L. ; SCARANO, T.  
S. ; HALSTAD, O. M. ;  
REPT. NO. USCG-714121/100  
PROJ: CG-714121

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WASTES (SANITARY ENGINEERING),  
\*PROCESSING), (\*SHIPS, WATER POLLUTION), INSTALLATION,  
STRUCTURAL MEMBERS, STORAGE TANKS, WATER FILTERS,  
SEWAGE, PERFORMANCE (ENGINEERING), ACCEPTABILITY, COAST  
GUARD

(U)

IDENTIFIERS: EVALUATION

(U)

A SHIPBOARD AEROBIC WASTE TREATMENT SYSTEM,  
UTILIZING HYDRAULIC COMMINUTION, VACUUM AERATION,  
GRAVITY SETTLING AND FILTRATION, WAS FIELD TESTED AND  
EVALUATED TO DETERMINE ITS EFFECTIVENESS IN REDUCING  
SUSPENDED SOLIDS, BIOCHEMICAL OXYGEN DEMAND (BOD)  
AND COLIFORM DENSITY. THE SYSTEM WAS INSTALLED ON  
THE CGC ALERT (WMEC-630) BASED AT CAPE MAY,  
NEW JERSEY. INFLUENT AND EFFLUENT WASTE  
PROPERTIES WERE DETERMINED. INFLUENT WASTES  
CONSISTED OF SANITARY, GALLEY, SCULLERY, SHOWER AND  
LABORATORY WASTES, AND DISCHARGES FROM DECK DRAINS  
BELOW THE WATER LEVEL. PHYSICAL MODIFICATIONS TO  
THE SYSTEM WERE MADE IN AN ATTEMPT TO IMPROVE ITS  
PERFORMANCE. A DETAILED DESCRIPTION OF THE  
SYSTEM'S OPERATION AND AN EVALUATION OF ITS  
PERFORMANCE ARE INCLUDED. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 724 114 7/1 13/2  
PICATINNY ARSENAL DOVER N J

A LABORATORY STUDY OF AN EXTRACTION SYNTHESIS  
TECHNIQUE FOR THE ELIMINATION OF POLLUTANTS  
FROM MAHON FOG FILTER WATERS AT TNT  
PLANTS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAY 71 29p SIELE, V. I. ; RIBAUDO, C. ;  
REPT. NO. PA-TR-4163

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, \*NITROBENZENES),  
(\*MUNITIONS INDUSTRY, WATER POLLUTION), (\*TNT,  
MANUFACTURING), WASTES(INDUSTRIAL), DNT, GAS FILTERS,  
SOLVENT EXTRACTION, NITRATION, TOLUENES (U)  
IDENTIFIERS: VOLUNTEER ARMY AMMUNITION PLANT,  
\*CONTROL, \*WATER POLLUTION, \*NITRO COMPOUND, JOINT  
PANEL AMMUNITION DISPOSAL, JPAD(JOINT PANEL  
AMMUNITION DISPOSAL) (U)

BY A SIMPLE EXTRACTION TECHNIQUE, USING A VOLUME  
RATIO OF APPROXIMATELY 1 TOLUENE TO 150 MAHON  
WATER, ESSENTIALLY ALL OF THE NITROTOLUENE IMPURITIES  
CAN BE REMOVED FROM THE MAHON WATER PRESENTLY  
POLLUTING STREAMS IN THE VICINITY OF TNT  
MANUFACTURING PLANTS. MILITARY GRADE TNT CAN BE  
PREPARED FROM THESE TOLUENE EXTRACTS WHICH CONTAIN  
UP TO 6.4% NITROTOLUENES. THIS PROCESS, HOWEVER,  
CANNOT BE USED TO ELIMINATE THE NITROTOLUENES PRESENT  
IN TNT WATERS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 724 273 11/12 13/2  
FOREST PRODUCTS LAB MADISON WIS

HOUSEHOLD SEPARATION OF WASTEPAPER: FPL  
EMPLOYEE SURVEY.

(U)

DESCRIPTIVE NOTE: FOREST SERVICE RESEARCH PAPER,  
71 43P MYERS, GARY C. ;  
REPT. NO. FSRP-FPL-159

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PAPER, SEPARATION), (\*WASTES(SANITARY  
ENGINEERING), SALVAGE), SELECTION, COLLECTING METHODS,  
STANDARDS, RECOVERY, STATISTICAL DATA (U)  
IDENTIFIERS: WASTE PAPER, \*WASTE RECYCLING, WOOD  
FIBERS, \*REFUSE DISPOSAL, \*SOLID WASTE DISPOSAL (U)

WOOD FIBER PRODUCTS CONSTITUTE A LARGE PROPORTION  
OF THE TOTAL WEIGHT OF MUNICIPAL REFUSE, RANGING FROM  
40 TO 55 PERCENT. THIS REPRESENTS A SIGNIFICANT  
LOSS OF OUR VALUABLE WOOD RESOURCE, AND WHEN  
WASTEPAPER IS DISPOSED OF IMPROPERLY, IT CONTRIBUTES  
TO POLLUTION OF OUR ENVIRONMENT. THE MAIN GOAL OF  
THE STUDY WAS TO OBTAIN INFORMATION ON THE QUANTITY  
AND GRADE OF PAPER PRODUCTS BEING DISCARDED FROM  
HOUSEHOLDS. IN THE STUDY, DAILY PER PERSON PAPER  
DISCARDS IN HOUSEHOLD TRASH AVERAGED 0.53 POUND.  
DISCARDS WERE 47 PERCENT NEWSPAPERS, 13 PERCENT  
MAGAZINES, 12 PERCENT STRONG PAPERS, AND 28 PERCENT  
ALL OTHER PAPER ITEMS MIXED. MUCH MORE KNOWLEDGE  
IS NEEDED OF THE MOTIVATION OF INDIVIDUALS TO  
PARTICIPATE IN HOUSEHOLD TRASH SEPARATION PLANS.  
THE VOLUNTEER GROUP IN THIS STUDY HAD NO DIFFICULTY  
SEPARATING EASILY IDENTIFIED ITEMS SUCH AS NEWSPAPERS  
AND MAGAZINES. DIFFICULTY WAS EXPERIENCED IN  
IDENTIFYING ITEMS IN THE STRONG PAPER AND MIXED PAPER  
GRADES AND IN DISTINGUISHING BETWEEN PAPER AND  
NONPAPER ITEMS IN THE MIXED GRADE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 724 866 13/2  
SUNFLOWER ARMY AMMUNITION PLANT LAWRENCE KANS

SUN 143-10. SOLVENTLESS EXTRUDED POWDER N-  
5 GENERAL. WATER POLLUTION STUDY  
(DENITRIFICATION).

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUN 70-APR 71,  
APR 71 71P GILKISON, THOMAS M. ;  
CONTRACT: DA-11-173-AMC-42(A)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, \*NITRATES), (\*MUNITIONS  
INDUSTRY, WATER POLLUTION), PILOT PLANTS,  
WASTES(INDUSTRIAL), BACTERIA, REMOVAL, DESIGN, COSTS (U)  
IDENTIFIERS: \*CONTROL, \*WATER POLLUTION, \*BACTERIAL  
DEGRADATION, \*INDUSTRIAL WASTE TREATMENT, \*SUNFLOWER  
ARMY AMMUNITION PLANT, \*DENITRIFICATION, JOINT  
PANEL AMMUNITION DISPOSAL, JPAD(JOINT PANEL  
AMMUNITION DISPOSAL)

(U)

THE BIOLOGICAL DENITRIFICATION PROCESS WAS STUDIED  
TO DETERMINE ITS EFFECTIVENESS IN REMOVING NITRATES  
FROM SUNFLOWER ARMY AMMUNITION PLANT (SAAP)  
WASTEWATER. LABORATORY AND PILOT PLANT STUDIES  
WERE CONDUCTED ON BOTH BATCH AND CONTINUOUS  
OPERATIONS. SEWAGE AND SLUDGE FROM IMHOFF  
SETTLING TANKS WERE USED AS SOURCES OF BACTERIA TO  
TREAT NEUTRALIZED WASTEWATERS THAT WERE HIGH IN  
NITRATES, RANGING FROM 100 TO 230 MG/L OF NITRATE  
NITROGEN. NITRATE REMOVAL RANGED FROM 70% AT LOW  
TEMPERATURES TO AS HIGH AS 99% AT HIGH  
TEMPERATURES. BACTERIAL DENITRIFICATION WAS FOUND  
TO BE A FEASIBLE AND PRACTICAL METHOD TO REDUCE THE  
CONCENTRATION OF NITRATES IN SAAP WASTEWATER.  
(AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 725 844 6/8 13/10  
SYSTEMS RESEARCH CORP WASHINGTON D C

REPORT OF DISPOSABLE MESS GEAR TEST  
CONDUCTED AT CHARLESTON NAVAL SHIPYARD,  
CHARLESTON, SOUTH CAROLINA.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.

AUG 69 69P

REPT. NO. SRC-69-TR-N2203

CONTRACT: N00024-69-C-0258

MONITOR: NAVSHIPS 0907-003-7010

UNCLASSIFIED REPORT

DESCRIPTORS: (\*KITCHEN EQUIPMENT AND SUPPLIES, NAVAL  
VESSELS), ACCEPTABILITY, SANITARY ENGINEERING,  
INCINERATORS, PLASTICS, NAVAL RESEARCH

(U)

IDENTIFIERS: \*KITCHEN EQUIPMENT AND SUPPLIES,  
DISPOSABLE MESS GEAR

(U)

THE REPORT DESCRIBES A TEST OF DISPOSABLE MESS GEAR  
CONDUCTED AT THE CHARLESTON NAVAL SHIPYARD,  
COMSUBFLOT 6 SUBMARINE MESS. THE PURPOSE OF  
THE TEST WAS TO DETERMINE THE ACCEPTABILITY OF  
PLASTIC UTENSILS BY NAVY PERSONNEL AND THE  
CHARACTERISTICS OF INCINERATOR DISPOSAL. THE  
ACCEPTABILITY TEST WAS DESIGNED TO GIVE THE NAVY  
PERSONNEL THE FREE CHOICE OF PLASTIC OR STANDARD  
NAVY MESS GEAR. THE PLASTIC GEAR USED IN THE  
TEST WAS FOUND TO BE VERY ACCEPTABLE. MINOR DESIGN  
PROBLEMS WITH THE PLASTIC FLATWARE WERE UNCOVERED  
WHICH, WHEN CORRECTED, SHOULD MAKE THE TOTAL SYSTEM  
HIGHLY ACCEPTABLE. INCINERATION PROVED TO BE AN  
EXCELLENT METHOD OF DISPOSAL; HOWEVER, MODIFICATION  
WILL BE REQUIRED TO MAKE IT SUITABLE FOR SHIPBOARD  
APPLICATION. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 726 015 18/10 18/7 18/2  
ARMY ENGINEER REACTORS GROUP FORT BELVOIR VA ENGINEERING  
DIV

CORE INVENTORY CALCULATIONS FOR CERTAIN  
HEAVY ISOTOPES IN USAERG NUCLEAR POWER  
PLANTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 71 52P DENEDETTO, ANTHONY R. ;  
MACMURRAY, LLOYD C. ;  
REPT. NO. ED-7105

UNCLASSIFIED REPORT

DESCRIPTORS: (\*REACTOR FUELS, \*RADIOACTIVE ISOTOPES),  
(\*RADIOACTIVE WASTES, REACTOR FUELS), ELECTRIC POWER  
PRODUCTION, NUCLEAR REACTORS, REACTOR CORES, REACTOR  
THEORY, DISPOSAL, COMPUTER PROGRAMS, DIFFERENTIAL  
EQUATIONS, NUMERICAL ANALYSIS

(U)

IDENTIFIERS: MH-1A REACTOR, SM-1A NUCLEAR REACTORS,  
SM-1 REACTORS

(U)

A STUDY WAS CONDUCTED TO DETERMINE THE CAPABILITY  
OF ARMY NUCLEAR POWER PROGRAM (ANPP) PLANTS  
TO MANUFACTURE THE RADIOACTIVE TRANSURANIC ELEMENTS  
AND THEIR DAUGHTERS. THE FORTRAN COMPUTER CODE  
MPC1 WAS WRITTEN AS AN AID IN THE CALCULATION OF  
THE CONCENTRATIONS OF SELECTED RADIONUCLIDES IN THE  
PRIMARY COOLANT OF A NUCLEAR POWER PLANT AFTER A  
POSTULATED RELEASE OF IRRADIATED FUEL INTO THE  
COOLANT. THE RESULTS OF THESE CALCULATIONS FOR THE  
ANPP PLANTS SM-1, SM-1A, AND MH-1A ARE  
REPORTED, ALONG WITH A DETAILED DESCRIPTION OF  
MPC1. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 726 323 18/7 18/8 13/2  
ARMY ENGINEER REACTORS GROUP FORT BELVOIR VA ENGINEERING  
DIV

ENVIRONMENTAL RADIATION MONITORING PLAN FOR  
SM-1A NUCLEAR POWER PLANT, FORT GREELY,  
ALASKA.

(U)

MAY 71 24P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES REPORT DATED 15 JUN 70,  
AD-717 050.

DESCRIPTORS: (\*RADIOACTIVE WASTES, DISPOSAL), (\*NUCLEAR  
POWER PLANTS, ALASKA), (\*RADIOACTIVE CONTAMINATION,  
RADIATION MONITORS), MILITARY FACILITIES, HYDROLOGY,  
WATER POLLUTION, AIR POLLUTION, STATISTICAL ANALYSIS (U)  
IDENTIFIERS: SM-1A NUCLEAR REACTORS, FORT GREELY (U)

THE PURPOSE OF AN ENVIRONMENTAL MONITORING PROGRAM  
IS TO ASSURE THAT THE WASTE CONTROL PROCEDURES  
UTILIZED BY A REACTOR PLANT ARE EFFECTIVE IN  
PRESERVING THE INTEGRITY OF THE SURROUNDING  
ENVIRONMENT. THE SM-1A ENVIRONMENTAL  
RADIATION MONITORING PLAN PROVIDES A SYSTEMATIC  
METHOD OF SAMPLE COLLECTION, PROCESSING, AND COUNTING  
TO ASSURE STANDARDIZED DATA IN SUFFICIENT QUANTITY TO  
PERMIT RELIABLE STATISTICAL ANALYSIS. PERIODIC  
REPORTS ARE PREPARED SUMMARIZING AND INTERPRETING THE  
RESULTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 726 327 18/7 13/2 18/8  
ARMY ENGINEER REACTORS GROUP FORT BELVOIR VA ENGINEERING  
DIV

ENVIRONMENTAL RADIATION MONITORING PLAN FOR  
MH-1A NUCLEAR POWER PLANT, GATUN, PANAMA  
CANAL ZONE.

(U)

MAY 71 26P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*RADIOACTIVE WASTES, DISPOSAL),  
(\*RADIOACTIVE CONTAMINATION, RADIATION MONITORS),  
(\*NUCLEAR POWER PLANTS, PANAMA), MILITARY FACILITIES,  
AIR POLLUTION, WATER POLLUTION, HYDROLOGY, STATISTICAL  
ANALYSIS

(U)

IDENTIFIERS: MH-1A REACTOR

(U)

THE PURPOSE OF MONITORING THE CONCENTRATION OF  
RADIOACTIVITY IN THE ENVIRONMENT IS TO DETERMINE THE  
EFFECTS, IF ANY, RESULTING FROM OPERATION OF THE  
MH-1A NUCLEAR POWER PLANT. THE MH-1A  
ENVIRONMENTAL RADIATION MONITORING PLAN  
PROVIDES A SYSTEMATIC METHOD OF SAMPLE COLLECTION,  
PROCESSING, AND COUNTING TO ASSURE STANDARDIZED DATA  
IN SUFFICIENT QUANTITY TO PERMIT RELIABLE STATISTICAL  
ANALYSES. PERIODIC REPORTS ARE PREPARED,  
SUMMARIZING AND INTERPRETING THE RESULTS.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 726 901 18/7 7/1  
BALLISTIC RESEARCH LABS ABERDEEN PROVING GROUND MD

A RADIOACTIVE LIQUID WASTE TREATMENT  
FACILITY UTILIZING A WIPED-FILM EVAPORATOR,

(U)

MAR 71 95P THIEME, ALLEN ; GOFF, DAVID  
L. ; BLOORE, ERNEST W. ;  
REPT. NO. BRL-1538  
PROJ: RDT/E-1-N-022601-A-089  
TASK: 1-N-022601-A-08904

UNCLASSIFIED REPORT

DESCRIPTORS: (\*RADIOACTIVE WASTES, DISPOSAL),  
(\*DISPOSAL, EVAPORATORS), (\*EVAPORATORS, RADIOACTIVE  
WASTES), ION EXCHANGE, DECONTAMINATION, DISTILLATION,  
OPERATION, COSTS (U)

A RADIOACTIVE LIQUID WASTE CONCENTRATION  
FACILITY UTILIZING WIPED-FILM EVAPORATION AND MIXED-  
BED ION EXCHANGE TREATMENT HAS BEEN CONSTRUCTED AND  
EVALUATED. LOW-LEVEL WASTES TO BE TREATED INCLUDE  
REACTOR PRIMARY COOLANT WATER, LIQUID DECONTAMINATION  
WASTE GENERATED AT REACTOR SITES, AND  
DECONTAMINATION, LABORATORY, AND LAUNDRY WASTE  
GENERATED BY RESEARCH LABORATORIES UTILIZING  
RADIOACTIVE ISOTOPES. SOME DATA ARE REPORTED FOR  
PROCESSING OF ALKALINE PERMANGANATE, HYDRAZINE  
VERSENATE, AMMONIUM CITRATE, AND POTASSIUM  
TETRABORATE TETRAHYDRATE SOLUTIONS. THE EVAPORATOR  
OPERATED TROUBLE FREE AND ANTIFOAM AGENTS WERE NOT  
REQUIRED SINCE FOAMING WAS NOT A PROBLEM.  
OPERATING EXPERIENCE AND A COST EVALUATION ARE  
INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 727 040 6/11  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

STERILITY OF WATER RECOVERED FROM HUMAN  
WASTE DURING EXTENDED MISSIONS IS  
ATTAINABLE WITHOUT POST-TREATMENT; AN  
ENGINEERING APPROACH,

(U)

APR 70 10P METZGER, COURTNEY A. ;  
REPT. NO. AMRL-TR-70-19  
PROJ: AF-6373

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER SUPPLIES, RECLAMATION),  
(\*WASTES(SANITARY ENGINEERING), RECLAMATION), (\*LIFE  
SUPPORT, WATER SUPPLIES), STERILIZATION, HUMANS,  
EXCRETION, ENGINEERING, PROCESSING

(U)

THE PAPER SUMMARIZES THE RESULTS OF AN ENGINEERING  
APPROACH TO THE PROBLEM OF PRODUCING BACTERIA-FREE  
(VIABLE OR NONVIABLE) WATER FROM HUMAN WASTE IN  
AN EARTH ENVIRONMENT AND/OR DURING AN AEROSPACE  
MISSION. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 729 049 7/1 13/2  
SUNFLOWER ARMY AMMUNITION PLANT LAWRENCE KANS

SUN 143-10. SOLVENTLESS EXTRUDED POWDER N-5 GENERAL. GET THE LEAD OUT. METHODS FOR REMOVING LEAD FROM PLANT WASTE WATER STREAMS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 71 80P KOZAK, MICHAEL A. ; BACZUK,  
R. J. ; LANDRAM, G. K. ;  
CONTRACT: DA-11-173-AMC-42(A)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, \*LEAD),  
(\*WASTES(INDUSTRIAL), LEAD), (\*MUNITIONS INDUSTRY, WATER  
POLLUTION), ION EXCHANGE, CHEMICAL PRECIPITATION,  
SULFATES, CHLORIDES, CHEMICAL ENGINEERING, PILOT PLANTS,  
DISPOSAL (U)

IDENTIFIERS: \*WATER POLLUTION CONTROL, \*LEAD ORGANIC  
COMPOUNDS, N-5 PROPELLANT, \*CHEMICAL REMOVAL(WATER  
TREATMENT), \*INDUSTRIAL WASTE TREATMENT, SUNFLOWER  
ARMY AMMUNITION PLAN, JOINT PANEL AMMUNITION  
DISPOSAL, JPAD(JOINT PANEL AMMUNITION  
DISPOSAL) (U)

STUDIES WERE INITIATED TO DETERMINE METHODS FOR THE  
REMOVAL OF LEAD FROM THE WASTE WATER STREAMS AT THE  
SUNFLOWER ARMY AMMUNITION PLANT, LAWRENCE,  
KANSAS. TWO APPROACHES WERE TAKEN. THE FIRST  
INVESTIGATED THE ION EXCHANGE PROCESS FOR LEAD  
REMOVAL. USING A RESIN COLUMN IN PILOT PLANT  
STUDIES, A REDUCTION OF LEAD IN THE SUNFLOWER  
BLENDER EFFLUENT TO A LEVEL OF 0.05 PPM WAS  
ACCOMPLISHED. THE SECOND APPROACH INVOLVED THE USE  
OF THE LEAD PRECIPITATION METHOD IN A PILOT PLANT  
LOCATED ADJACENT TO THE BLENDER. LIME AND FERRIC  
SALTS (FERRIC CHLORIDE AND FERRIC SULFATE) WERE  
USED TO TREAT THE BLENDER WASTE WATER. LEAD  
REMOVALS OF 75 - 85 PERCENT WERE ACHIEVED, TO LEVELS  
AS LOW AS 0.30 PARTS PER MILLION. OVERALL  
IMPROVEMENT IN WATER QUALITY WAS ALSO REALIZED WITH  
THIS SYSTEM. A COMBINATION OF BOTH SYSTEMS IS  
RECOMMENDED FOR TREATING WASTE WATER STREAMS AT  
SAAP. THE LEAD PRECIPITATE SYSTEM, AFTER  
REMOVING APPROXIMATELY 80 PERCENT LEAD AND IMPROVING  
THE WATER QUALITY, WOULD DISCHARGE INTO THE ION  
EXCHANGE PROCESS WHERE THE LEAD LEVELS WOULD BE  
REDUCED TO AT LEAST 0.05 PPM. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 729 929 13/2  
EDGEWOOD ARSENAL MD

PROCEEDINGS OF MEETING ON ENVIRONMENTAL  
POLLUTION (2ND) 24-25 MARCH 1971, SPONSORED  
BY AMERICAN ORDNANCE ASSOCIATION.

(U)

DESCRIPTIVE NOTE: SPECIAL PUBLICATION,  
AUG 71 226P LOVE, SOLOMON ;  
REPT. NO. EA-SP-100-102

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, SYMPOSIA), (\*WATER  
POLLUTION, SYMPOSIA), DEPARTMENT OF DEFENSE, MONITORS,  
RAMAN SPECTROSCOPY, MARYLAND, PENNSYLVANIA, URBAN AREAS,  
INCINERATORS, SCIENTIFIC RESEARCH, NUCLEAR POWER PLANTS,  
RADIOLOGICAL CONTAMINATION, ECOLOGY, DISPOSAL,  
WASTES (SANITARY ENGINEERING), PLASTICS, PESTICIDES (U)  
IDENTIFIERS: AIR POLLUTION DETECTION, REMOTE SENSING,  
\*SOLID WASTE DISPOSAL, \*GOVERNMENT POLICIES, HAZARDOUS  
MATERIALS, TOXIC AGENT DECONTAMINATION, EAGLE PROJEC,  
JOINT PANEL AMMUNITION DISPOSAL, JPAD (JOINT  
PANEL AMMUNITION DISPOSAL) (U)

THE TITLES OF THE REPORTS PRESENTED INCLUDE:  
THE JOINT ROLE OF DEPARTMENT OF DEFENSE AND  
INDUSTRY IN PROTECTING THE ENVIRONMENT; CHANGES IN  
FEDERAL ORGANIZATION FOR ENVIRONMENTAL CONTROL -  
CHANGES FLOWING FROM THE ESTABLISHMENT OF THE  
ENVIRONMENTAL PROTECTION AGENCY; THE AIR  
POLLUTION STORY IN ALLEGHENY COUNTY; 'CAN THE  
URBAN ENVIRONMENT BE MANAGED?'; FEDERAL PROGRAM FOR  
AIR MONITORING TECHNOLOGY; M34 DEMILITARIZATION  
PROGRAM TASK FORCE EAGLE; DETECTION AND  
PROTECTION ASPECTS OF PROJECT EAGLE;  
CONSIDERATION IN REMOTE RAMAN SPECTROSCOPY;  
MARYLAND'S STATE AND LOCAL AIR QUALITY CONTROL  
AGENCIES 'ROUTINE COMPREHENSIVE AIR MONITORING  
SYSTEM'; PROBLEMS IN MEETING EMISSION STANDARDS;  
THE ENVIRONMENTAL PROTECTION AGENCY R AND  
D PROGRAM FOR WATER QUALITY CONTROL; NUCLEAR  
POWER AND THE ENVIRONMENT; EDGEWOOD ARSENAL'S  
TEST AREA ECOLOGY PROGRAM; SOLID WASTE DISPOSAL  
FROM THE STATE'S POINT OF VIEW; HANDLING AND  
INCINERATION OF PESTICIDES, PLASTICS, AND HAZARDOUS  
CHEMICALS; ADVANCED FLUID BED INCINERATOR. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 731 569 13/2  
AIR WAR COLL MAXWELL AFB ALA

ENVIRONMENTAL POLLUTION.

(U)

DESCRIPTIVE NOTE: MILITARY ESSAY,  
71 38P KOON, C. DOYLE ;  
REPT. NO. 3856

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, ENVIRONMENT), (\*AIR  
POLLUTION, ENVIRONMENT), (\*WASTES(SANITARY ENGINEERING),  
ENVIRONMENT), WASTES(INDUSTRIAL), CONTROL, ECOLOGY,  
UNITED STATES GOVERNMENT, ECONOMICS (U)  
IDENTIFIERS: ABATEMENT, \*POLLUTION, SOLID WASTE  
DISPOSAL, ENVIRONMENTAL SURVEYS (U)

THE ADEQUATE DISPOSAL OF WASTE AND THE PURIFICATION  
OF AIR AND WATER HAS BECOME A MAJOR ENVIRONMENTAL  
CHALLENGE. A MEAGER AMOUNT OF PROGRESS HAS BEEN  
MADE IN THE PAST, BUT MUCH LACKS TO BE DONE BY THE  
NATION AS A WHOLE. IT IS NOT THE PURPOSE OF THE  
PAPER TO OFFER AN ABSOLUTE SOLUTION TO ALL PROBLEMS  
ENCOUNTERED IN ENVIRONMENTAL POLLUTION. RATHER, IT  
IS AN ATTEMPT TO BRING OUT SOME OF THE POSSIBLE  
SOLUTIONS THAT MAY BE ADOPTED BY GOVERNMENT. THE  
PROBLEMS NOW EXISTING AND SOME OF THE SOLUTIONS IN  
ERADICATING THEM ARE OUTLINED HEREIN AND DISCUSSED.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 731 676 13/2  
PACIFIC MISSILE RANGE POINT MUGU CALIF

BEACH AND NEAR-SHORE WATER POLLUTION:  
RINCON POINT TO POINT MUGU, CALIFORNIA.

(U)

DESCRIPTIVE NOTE: TECHNICAL PUB.,  
OCT 71 85p WINTERS, PHILIP R. ;  
REPT. NO. PMR-TP-71-5

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, \*SEACOAST),  
(\*CALIFORNIA, WATER POLLUTION), (\*URBAN AREAS, WATER  
POLLUTION), PACIFIC OCEAN, OCEANS, WASTES(SANITARY  
ENGINEERING), WASTES(INDUSTRIAL), OILS, RADIOLOGICAL  
CONTAMINATION, ECOLOGY, PESTICIDES, BEACHES,  
BIBLIOGRAPHIES, CONTROL, SILT, SEDIMENTATION, HARBORS,  
SEWAGE (U)  
IDENTIFIERS: OIL POLLUTION, ABATEMENT, AGRICULTURAL  
WASTES (U)

IN TERMS OF BOTH POPULATION AND INDUSTRIALIZATION,  
THE COASTAL ZONE OF VENTURA COUNTY, CALIFORNIA  
IS ONE OF THE FASTEST GROWING AREAS IN THE STATE,  
AND EACH NEWCOMER, INDIVIDUAL OR INDUSTRIAL, ADDS TO  
THE VOLUME OF WASTE MATERIAL THAT MUST BE DISPOSED.  
SIGNIFICANTLY, A LARGE PORTION OF VENTURA  
COUNTY'S WASTES ULTIMATELY POLLUTES THE BEACH AND  
NEAR-SHORE WATERS BETWEEN RINCON POINT AND  
POINT MUGU. IN THIS AREA, INDUSTRIAL WASTE AND  
WASTE PRODUCTS ASSOCIATED WITH HUMAN OCCUPANCE  
COMBINED WITH SILTATION, NATURAL OIL SEEPS, BY-  
PRODUCTS OF AGRICULTURE, AND THERMAL AND RADIATION  
WATER CONTAMINATION ARE CRITICAL PROBLEMS THAT HAVE  
NEVER BEEN ADEQUATELY STUDIED. INTEGRATION OF DATA  
CONCERNING THESE POLLUTION VECTORS PROVIDES AN  
ILLUSTRATION OF THE SPATIAL INTERACTION BETWEEN MAN  
AND THE LAND; EXPLAINS SOME ECOLOGIC RELATIONSHIPS,  
AND MAKES UNDERSTANDABLE THE PUBLIC'S URGENT DRIVE TO  
ENHANCE THE ENVIRONMENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 733 082 13/2 13  
GENERAL DYNAMICS SAN DIEGO CALIF ELECTRIC BOAT DIV

SHIPBOARD SEWAGE TREATMENT SYSTEM. (U)

DESCRIPTIVE NOTE: FINAL REPT. APR-NOV 71 ON PHASE I,  
NOV 71 78p BAILEY, JAMES R. ; BEMBERIS,  
IVARS ; HUBBARD, P. J. ; PRESTI, JOHN B. ;  
REPT. NO. U413-71-059  
CONTRACT: N00024-71-C-5329  
PROJ: S4632-002  
TASK: TASK 12101

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHIPS, \*SANITARY ENGINEERING), WATER  
FILTERS, TEST METHODS, SEWAGE, WATER POLLUTION, DESIGN,  
MEMBRANES, SHIP AUXILIARY EQUIPMENT, MECHANICAL  
DRAWINGS, OPERATION, TEST METHODS (U)  
IDENTIFIERS: \*WATER POLLUTION CONTROL, \*SEWAGE  
TREATMENT, \*SHIPBOARD SEWAGE TREATMENT SYSTEMS,  
ULTRAFILTRATION (U)

SMALL SCALE STUDIES WERE CONDUCTED TO DEMONSTRATE  
PROCESS FEASIBILITY UNDER UNIQUE SHIPBOARD CONDITIONS  
AND TO DEVELOP DESIGN DATA FOR A NAVY SHIPBOARD  
WASTE TREATMENT SYSTEM. THE ACTIVATED SLUDGE/  
ULTRAFILTRATION PROCESS SHOWED REMARKABLE STABILITY  
UNDER A VARIETY OF ADVERSE OPERATING CONDITIONS.  
EFFLUENT CHARACTERISTICS WERE OF A HIGH QUALITY  
(BOD LESS THAN 10 MG/ , SS ZERO, AND COLIFORM  
GENERALLY ZERO). THE LABORATORY DATA WAS  
EMPLOYED IN THE PRELIMINARY DESIGN OF THE PHASE  
II SYSTEM. THE MINIMUM VOLUME CONFIGURATION FOR A  
200-MAN UNIT WILL OCCUPY 380 CUBIC FEET. IT WILL  
BE TOTALLY SELF CONTAINED, INDEPENDENT OF ANY LAND-  
BASED INSTALLATIONS, AND IS EXPECTED TO MEET ALL  
OPERATIONAL REQUIREMENTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 735 095 13/2 13/10  
THIOL CHEMICAL CORP BRIGHAM CITY UTAH WASATCH DIV

NAVY ADVANCED WASTE TREATMENT SYSTEM. (U)

DESCRIPTIVE NOTE: FINAL REPT. 20 APR-22 DEC 71 ON  
PHASE I,

DEC 71 196P NANCE, PAUL D. ; O'GRADY,  
TOM ; MCINTOSH, HOWARD ; POULTER, LARRY ;  
DAUGHERTY, O. ;

CONTRACT: N00024-71-C-5332

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHIPS, \*SANITARY ENGINEERING), DESIGN,  
PHOTOCHEMISTRY, CATALYSTS, CENTRIFUGE SEPARATION,  
INCINERATORS, ELECTROLYTIC CELLS, OXIDATION, CHEMICAL  
ENGINEERING, HYPOCHLORITES, SEWAGE, ULTRAVIOLET  
RADIATION, AIR POLLUTION, WATER POLLUTION (U)  
IDENTIFIERS: WATER POLLUTION CONTROL, \*SEWAGE  
TREATMENT, \*SHIPBOARD SEWAGE TREATMENT SYSTEMS (U)

THE REPORT COVERS RESEARCH AND DEVELOPMENT EFFORTS  
WHICH HAVE DEMONSTRATED THE FEASIBILITY OF AN  
ADVANCED PHOTOCHEMICAL WASTE TREATMENT SYSTEM. A  
FULL SCALE SYSTEM FOR A 200 MAN VESSEL HAS BEEN  
FABRICATED AND TESTED. DATA IS PRESENTED ON A 200  
MAN NAVY PROTOTYPE SYSTEM CAPABLE OF TREATING 5,200  
GAL PER DAY OF SEWAGE. EFFLUENT FROM THE SEWAGE  
HAS BEEN TREATED TO A LEVEL OF SUSPENDED SOLIDS UNDER  
80 MG/L, BOD UNDER 50 MG/L, AND A COLIFORM BACTERIA  
COUNT NEAR ZERO. A PARALLEL DEMONSTRATION PROGRAM  
WAS CONDUCTED WITH A CATALYST IN PLACE OF THE UV  
CELL. BECAUSE OF THE MAJOR REDUCTION IN SYSTEM  
SIZE, COMPLEXITY, AND POWER CONSUMPTION WITH THE  
CATALYST SYSTEM, IT WAS PREFERRED. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY. SEARCH CONTROL NO. /ZOM09

AD- 735 378 13/2 17/7  
SPERRY RAND CORP GREAT NECK N Y SPERRY SYSTEMS MANAGEMENT  
DIV

SYSTEM STUDY FOR SURVEILLANCE OF OCEAN  
DUMPING OPERATIONS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

SEP 71 232P

REPT. NO. GB-2500-1072(NP)

CONTRACT: DACW51-71-C-0024

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, OCEAN  
SURVEILLANCE), (\*BARGES, \*POSITION FINDING), DISPOSAL,  
SEWAGE, WASTES(INDUSTRIAL), SYSTEMS ENGINEERING,  
EFFECTIVENESS, NEW YORK, ATLANTIC OCEAN, LORAN, WATER  
POLLUTION, ELECTRONIC RECORDING SYSTEMS, FEASIBILITY  
STUDIES

(U)

IDENTIFIERS: NEW YORK BIGHT, OCEAN WASTE DISPOSAL,  
SLUDGE DISPOSAL, \*SOLID WASTE DISPOSAL

(U)

THE ARMY CORP. OF ENGINEERS HAS THE  
RESPONSIBILITY TO GRANT PERMISSION FOR THE DUMPING OF  
WASTES IN THE OCEAN. THESE PERMITS AUTHORIZE THE  
DUMPING OF WASTES IN SPECIFIC DUMP AREAS ACCORDING TO  
THE NATURE OF THE WASTE MATERIAL. FOR MANY REASONS,  
INCLUDING THE POTENTIAL SEVERITY OF THE IMPACT OF  
SUCH PRACTICES ON THE ENVIRONMENT, THE NEW YORK  
DISTRICT WISHES TO ASSURE THAT THE DUMPING OF  
WASTES IS INDEED TAKING PLACE ACCORDING TO THE  
PROVISIONS OF THE PERMITS AND APPLICABLE REGULATIONS,  
AND ACCORDINGLY HAS AUTHORIZED A PLANNING PROGRAM TO  
DEFINE A SURVEILLANCE MONITORING SYSTEM. THE  
REPORT DESCRIBES A STUDY OF METHODS FOR SURVEILLANCE  
OF OCEAN DUMPING OPERATIONS IN NEW YORK  
BIGHT. GENERAL REQUIREMENTS, SYSTEM APPROACHES  
AND SYSTEM SPECIFICS ARE DISCUSSED. APPLICABLE  
CANDIDATE SYSTEMS ARE DESCRIBED AND ARE RATED.  
TOTAL COST OF OWNERSHIP IS CONSIDERED. THE  
RECOMMENDED SYSTEM IS DESCRIBED. THE RECOMMENDED  
SYSTEM USES LORAN A FOR POSITION FIXING, DRAFT  
SENSING FOR DETECTING OCCURRENCE OF DUMP, AND MEANS  
FOR RECORDING THESE AND OTHER IMPORTANT EVENTS.  
THE RECOMMENDED SYSTEM REQUIRES NO MAJOR  
DEVELOPMENT EFFORT.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 737 500 13/2  
DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA

ENVIRONMENTAL POLLUTION: SANITARY  
ENGINEERING AND INDUSTRIAL WASTE. (U)

DESCRIPTIVE NOTE: REPORT BIBLIOGRAPHY JAN 63-MAY 71.  
FEB 72 205P  
REPT. NO. DDC-TAS-71-57-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, \*BIBLIOGRAPHIES),  
(\*SANITARY ENGINEERING, BIBLIOGRAPHIES),  
(\*WASTES(INDUSTRIAL), BIBLIOGRAPHIES), SEWAGE, MUNITIONS  
INDUSTRY, SHIPS, METALS, CHEMICAL ANALYSIS, DISPOSAL,  
WASTES(SANITARY ENGINEERING), CLEANING, PUBLIC HEALTH,  
TOXICITY, WATER SUPPLIES, OCEANS, LAKES, AIR POLLUTIO(U)

THE ANNOTATED BIBLIOGRAPHY IS A COMPILATION OF  
REFERENCES TO REPORTS PROCESSED INTO THE DOCUMENT  
COLLECTION OF THE DEFENSE DOCUMENTATION CENTER  
FROM JANUARY 1963 THROUGH SEPTEMBER 1971.  
THESE CITATIONS COVER THE SUBJECTS OF SANITARY  
ENGINEERING AND INDUSTRIAL WASTES. INCLUDED ARE  
REFERENCES TO REPORTS ON POLLUTION OF OCEANS, RIVERS  
AND ESTUARIES BY THE DISPOSAL OF GARBAGE, SEWAGE AND  
WASTE. IN ADDITION TO AFOREMENTIONED REFERENCES;  
CITATIONS OF VARIOUS METHODS OF RECLAMATION AND  
TREATMENT OF WASTE ARE PRESENTED FROM LIFE SUPPORT  
AND CLOSED ECOLOGICAL SYSTEMS WHICH MAY PROVE  
BENEFICIAL TO ONGOING RESEARCH AND OPERATIONS FOR  
CONTROLLING ENVIRONMENTAL POLLUTION. CORPORATE  
AUTHOR-MONITORING AGENCY, SUBJECT, TITLE,  
PERSONAL AUTHOR, CONTRACT, AND REPORT  
NUMBER INDEXES ARE INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 737 681 13/2 5/3  
RAND CORP SANTA MONICA CALIF

EFFECTS OF POLLUTION CONTROL ON THE FIRM,

(U)

OCT 71 14P TIIANSKY, DENNIS P. ;  
REPT. NO. P-4725

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WASTES(INDUSTRIAL), ECONOMICS),  
MANAGEMENT PLANNING AND CONTROL, COSTS, LAW, AIR  
POLLUTION, WATER POLLUTION, INDUSTRIES (U)  
IDENTIFIERS: \*WATER POLLUTION ECONOMICS, CONTROL,  
WATER POLLUTION, AIR POLLUTION, CONTROL, \*AIR  
POLLUTION ECONOMICS, BENEFIT COST ANALYSIS (U)

THE REPORT DISCUSSED THE EFFECTS OF POLLUTION  
CONTROL ON AN INDUSTRIAL FIRM. ALTHOUGH LEGAL  
CONSTRAINTS MAY NOW NECESSITATE A FIRM TO CONTROL ANY  
POLLUTION IT GENERATES, THE AOTHORS POINT OUT THAT  
POLLUTION CONTROL EVEN IF NOT LEGALLY REQUIRED CAN  
PROVE TO BE BENEFICIAL. THE MONETARY EFFECTS,  
COSTS, AND BENEFITS ARE DISCUSSED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 738 544 13/2  
EDGEWOOD ARSENAL MD

PROCEEDINGS OF MEETING ON ENVIRONMENTAL  
POLLUTION (1ST), HELD ON 15-16 APRIL 1970,  
SPONSORED BY AMERICAN ORDNANCE ASSOCIATION. (U)

DESCRIPTIVE NOTE: SPECIAL PUBLICATION,  
FEB 72 229P ENGQUIST, ELMER ;  
REPT. NO. EA-Sp-100-78

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, SYMPOSIA), (\*WATER  
POLLUTION, SYMPOSIA), CHEMICAL WARFARE AGENTS, DISPOSAL,  
WASTES (INDUSTRIAL), CARBON, MUNITIONS INDUSTRY, NERVE  
AGENTS, CHEMICAL INDUSTRY, ATMOSPHERIC MOTION,  
AEROSOLS (U)

IDENTIFIERS: VOLUNTEER ARMY AMMUNITION PLANT, CONTROL,  
WATER POLLUTION, ACTIVATED CARBON, AIR POLLUTION  
DETECTION, REMOTE SENSING, \*SOLID WASTE DISPOSAL,  
INDUSTRIAL WASTE TREATMENT (U)

THE REPORT CONTAINS THE PAPERS PRESENTED AT  
EDGEWOOD ARSENAL ON 15 AND 16 APRIL 1970 AT THE  
FIRST MEETING ON ENVIRONMENTAL POLLUTION  
SPONSORED BY THE AMERICAN ORDNANCE ASSOCIATION.  
THE PAPERS WERE PRESENTED BY REPRESENTATIVES OF  
DEPARTMENT OF DEFENSE, INDUSTRY, AND PREDECESSOR  
ORGANIZATIONS OF THE ENVIRONMENTAL PROTECTION  
AGENCY (NATIONAL AIR POLLUTION CONTROL  
ADMINISTRATION, BUREAU OF SOLID WASTE  
MANAGEMENT, AND FEDERAL WATER POLLUTION  
CONTROL ADMINISTRATION). TOPICS INCLUDE  
SOLID AND LIQUID WASTE DISPOSAL, WATER AND AIR  
POLLUTION CONTROL, AND AIR MONITORING TECHNIQUES.  
(AUTHOR) (U)



UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 739 531 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT. SECTION 9. BIBLIOGRAPHY.

(U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 72 47P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SECTION 8, AD-739  
538.

DESCRIPTORS: (\*WATER POLLUTION, \*MARINE BIOLOGY),  
(\*OCEANS, WATER POLLUTION), (\*BIBLIOGRAPHIES, MARINE  
BIOLOGY), ATLANTIC OCEAN, WASTES(INDUSTRIAL),  
WASTES(SANITARY ENGINEERING), ECOLOGY, TOXICITY,  
DISPOSAL

(U)

IDENTIFIERS: WATER POLLUTION EFFECTS(PLANTS), WATER  
POLLUTION EFFECTS(ANIMALS), WASTE DISPOSAL, \*NEW YORK  
BIGHT, \*OCEAN WASTE DISPOSAL, BENTHOS, SLUDGE  
DISPOSAL, SOLID WASTE DISPOSAL, SPOIL

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 739 532 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT. SECTION 2. BENTHIC STUDIES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 72 277p

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SECTION 1, AD-739 539 AND  
SECTION 3, AD-739 532.

DESCRIPTORS: (\*MARINE BIOLOGY, \*WATER POLLUTION),  
(\*OCEANS, WATER POLLUTION), ATLANTIC OCEAN,  
WASTES(INDUSTRIAL), WASTES(SANITARY ENGINEERING),  
MICROORGANISMS, SEDIMENTATION, OCEAN BOTTOM SAMPLING,  
OXYGEN, PATHOLOGY, CRUSTACEA, METALS, BACTERIA,  
INVERTEBRATES, ECOLOGY, WASTES(SANITARY ENGINEERING),  
DISPOSAL

(U)

IDENTIFIERS: \*WATER POLLUTION EFFECTS(ANIMALS), \*WATER  
POLLUTION EFFECTS(PLANTS), WASTE DISPOSAL, \*NEW YORK  
BIGHT, \*OCEAN WASTE DISPOSAL, \*BENTHOS, COLIFORM  
BACTERIA, SLUDGE DISPOSAL, SOLID WASTE DISPOSAL,  
SPOIL, DISSOLVED GASES

(U)

THE REPORT DESCRIBES RESULTS OF STUDIES CONDUCTED  
TO OBTAIN DATA TO ASSESS THE EFFECTS OF WASTE  
DISPOSAL ON THE MARINE ENVIRONMENT OF THE NEW  
YORK BIGHT. IT REPORTS INVESTIGATIONS OF THE  
BENTHIC MEIO-FAUNA AND MACROFAUNA DISTRIBUTION IN THE  
NEW YORK BIGHT, BENTHIC MICROBIOLOGY,  
PATHOLOGICAL EFFECTS OF WASTES ON LARGER BENTHIC  
CRUSTACEANS, AND INVESTIGATION OF BASIC CHEMICAL  
VARIABLES AFFECTING SPECIES DIVERSITY.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 739 533 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT. SECTION 3. ZOOPLANKTON  
STUDIES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 74 118P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SECTION 2, AD-739 532 AND  
SECTION 4, AD-739 534.

DESCRIPTORS: (\*MARINE BIOLOGY, \*WATER POLLUTION),  
(\*OCEANS, WATER POLLUTION), (\*PLANKTON, WATER  
POLLUTION), ATLANTIC OCEAN, WASTES(INDUSTRIAL), ECOLOGY,  
ACIDS, DISPOSAL (U)

IDENTIFIERS: \*WATER POLLUTION EFFECTS(ANIMALS), WASTE  
DISPOSAL, ZOOPLANKTON, \*NEW YORK BIGHT, \*OCEAN WASTE  
DISPOSAL, SLUDGE DISPOSAL, SOLID WASTE DISPOSAL,  
SPOIL (U)

THE REPORT DESCRIBES RESULTS OF STUDIES CONDUCTED  
TO OBTAIN DATA TO ASSESS THE EFFECTS OF WASTE  
DISPOSAL ON THE MARINE ENVIRONMENT OF THE NEW  
YORK BIGHT. THE REPORT CONCERNS ZOOPLANKTON  
STUDIES INCLUDING DISTRIBUTION, SEASONAL OCCURRENCE  
AND VERTICAL MIGRATION OF ZOOPLANKTON POPULATIONS IN  
THE DUMPING GROUNDS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 739 534 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT. SECTION 4. FINFISH STUDIES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 72 27P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SECTION 3, AD-739 533 AND  
SECTION 5, AD-739 535.

DESCRIPTORS: (\*MARINE BIOLOGY, \*WATER POLLUTION),  
(\*OCEANS, WATER POLLUTION), (\*FISHES, WATER POLLUTION),  
ATLANTIC OCEAN, WASTES(SANITARY ENGINEERING), PARASITES,  
TOXICITY, WASTES(INDUSTRIAL), METALS, SAMPLING, ECOLOGY,  
DISPOSAL (U)

IDENTIFIERS: WASTE DISPOSAL, \*WATER POLLUTION  
EFFECTS(ANIMALS), MARINE FISHES, \*NEW YORK BIGHT,  
BENTHOS, SLUDGE DISPOSAL, SOLID WASTE DISPOSAL, SPOIL,  
TRACE ELEMENTS, FEEDING HABITS (U)

THE REPORT DESCRIBES RESULTS OF STUDIES CONDUCTED  
TO OBTAIN DATA TO ASSESS THE EFFECTS OF WASTE  
DISPOSAL ON THE MARINE ENVIRONMENT OF THE NEW  
YORK BIGHT. IT CONCERNS FINFISH STUDIES  
INVOLVING SPECIES DISTRIBUTION AND RELATIVE  
ABUNDANCE, FEEDING HABITS, AND SUMATIC EFFECTS AND  
PARASITES OF FISH FOUND IN THE AREA.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 739 535 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT. SECTION 5. CHEMICAL  
STUDIES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 72 189P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SECTION 4, AD-739 534 AND  
SECTION 6, AD-739 536.

DESCRIPTORS: (\*MARINE BIOLOGY, \*WATER POLLUTION),  
(\*OCEANS, WATER POLLUTION), (\*OCEAN BOTTOM SAMPLING,  
WATER POLLUTION), ATLANTIC OCEAN, WASTES(SANITARY  
ENGINEERING), WASTES(INDUSTRIAL), CHEMICAL ANALYSIS,  
SAMPLING, METALS, SEDIMENTATION, ACIDS, COLORIMETRIC  
ANALYSIS, IRON, PHOSPHORUS, OXYGEN, NITRATES, DISPOSAL(U)  
IDENTIFIERS: \*WATER ANALYSIS, WASTE DISPOSAL, \*NEW  
YORK BIGHT, \*OCEAN WASTE DISPOSAL, BENTHOS, SLUDGE  
DISPOSAL, SOLID WASTE DISPOSAL, SPOIL, TRACE  
ELEMENTS

(U)

THE REPORT DESCRIBES RESULTS OF STUDIES CONDUCTED  
TO OBTAIN DATA TO ASSESS THE EFFECTS OF WASTE  
DISPOSAL ON THE MARINE ENVIRONMENT OF THE NEW  
YORK BIGHT. IT CONCERNS CHEMICAL STUDIES  
INVOLVING INVESTIGATIONS OF TOTAL ORGANIC CARBON AND  
DISTRIBUTION OF CERTAIN ABUNDANT HEAVY METALS IN THE  
BOTTOM SEDIMENTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 739 536 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT. SECTION 6. SURFACE AND BOTTOM  
WATER MOVEMENT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 72 31P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SECTION 5, AD-739 535 AND  
SECTION 7, AD-739 537.

DESCRIPTORS: (\*WATER POLLUTION, \*MARINE BIOLOGY),  
(\*OCEANS, WATER POLLUTION), (\*HYDROGRAPHIC SURVEYING,  
ATLANTIC OCEAN), TEMPERATURE, OCEAN CURRENTS, SALINITY,  
OXYGEN, DISPOSAL (U)

IDENTIFIERS: WASTE DISPOSAL, \*NEW YORK BIGHT, \*OCEAN  
WASTE DISPOSAL, SLUDGE DISPOSAL, SOLID WASTE DISPOSAL,  
SPOIL, DISSOLVED GASES (U)

THE REPORT DESCRIBES RESULTS OF STUDIES CONDUCTED  
TO OBTAIN DATA TO ASSESS THE EFFECTS OF WASTE  
DISPOSAL ON THE MARINE ENVIRONMENT OF THE NEW  
YORK BIGHT. IT CONCERNS HYDROGRAPHIC STUDIES,  
INCLUDING SURFACE AND BOTTOM WATER CIRCULATION AND  
TEMPORAL CHANGES IN THE AREA AS INFERRED FROM DENSITY  
PATTERNS, SURFACE AND BOTTOM DRIFTERS, DIRECT CURRENT  
MEASUREMENTS, AND BY ANALYSIS OF PHYSICAL  
CHARACTERISTICS OF THE WATER MASSES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 739 537 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT. SECTION 7. CONCLUSIONS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 72 15P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SECTION 6, AD-739 536 AND  
SECTION 8, AD-739 538.

DESCRIPTORS: (\*WATER POLLUTION, \*MARINE BIOLOGY),  
(\*OCEANS, WATER POLLUTION), ATLANTIC OCEAN,  
WASTES(SANITARY ENGINEERING), WASTES(INDUSTRIAL),  
METALS, BACTERIA, CRUSTACEA, OCEAN BOTTOM, PLANKTON,  
ECOLOGY, DISPOSAL (U)  
IDENTIFIERS: WATER POLLUTION EFFECTS(ANIMALS), WATER  
POLLUTION EFFECTS(PLANTS), WASTE DISPOSAL, \*NEW YORK  
BIGHT, \*OCEAN WASTE DISPOSAL, SLUDGE DISPOSAL, SOLID  
WASTE DISPOSAL, SPOIL (U)

THE REPORT PRESENTS THE CONCLUSIONS TO A STUDY ON  
THE DISPOSAL OF DREDGING SPOILS AND SEWAGE SLUDGES ON  
THE MARINE ENVIRONMENT IN THE NEW YORK BIGHT.  
THE REPORT DISCUSSES THE BUILD UP OF HEAVY METALS,  
COLIFORM BACTERIA, SPREADING OF WASTES, AND EFFECTS  
ON MARINE ANIMALS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 739 536 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT. SECTION 8. LITERATURE CITED. (U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 72 17P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SECTION 7, AD-739 537 AND  
SECTION 9, AD-739 531.

DESCRIPTORS: (\*WATER POLLUTION, \*MARINE BIOLOGY),  
(\*OCEANS, MARINE BIOLOGY), ATLANTIC OCEAN,  
WASTES(INDUSTRIAL), WASTES(SANITARY ENGINEERING),  
ECOLOGY, TOXICITY, OCEAN BOTTOM, DISPOSAL (U)  
IDENTIFIERS: WASTE DISPOSAL, WATER POLLUTION  
EFFECTS(ANIMALS), WATER POLLUTION EFFECTS(PLANTS),  
\*NEW YORK BIGHT, \*OCEAN WASTE DISPOSAL, BENTHOS,  
SLUDGE DISPOSAL, SOLID WASTE DISPOSAL, SPOIL (U)

THE REPORT DESCRIBES THE LITERATURE CITED IN  
STUDIES CONDUCTED TO OBTAIN DATA TO ASSESS THE  
EFFECTS OF WASTE DISPOSAL ON THE MARINE ENVIRONMENT  
OF THE NEW YORK BIGHT. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 814 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 15. RECOMMENDED PLAN AND  
IMPLEMENTATION PROGRAM.

(U)

OCT 75 144P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ORIGINAL CONTAINS COLOR PLATES:  
ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE.  
INCLUDES ENVELOPE WITH MAP. SEE ALSO REPORT DATED MAR  
76. AD-A036 792.

DESCRIPTORS: •SANITARY ENGINEERING, •COST ANALYSIS,  
•SEWAGE TREATMENT, •WASTE WATER, •WASTE  
MANAGEMENT, WATER TREATMENT, WATER POLLUTION  
ABATEMENT, MANAGEMENT PLANNING AND CONTROL, PUBLIC  
UTILITIES, FACILITIES, SEWAGE DISPOSAL, PUMPING,  
PIPING SYSTEMS, OVERLOAD, CRITERIA, FINANCE,  
REGULATIONS, MASSACHUSETTS, URBAN AREAS  
IDENTIFIERS: BOSTON HARBOR

(U)

(U)

THIS REPORT COVERS THE RECOMMENDATIONS MADE AS A  
RESULT OF THE EMMA STUDY. WHILE ALL ITEMS  
PRESENTED IN THIS REPORT ARE INTERRELATED, EARLY  
CHAPTERS OF THIS REPORT DEAL WITH SPECIFIC ITEMS OF  
THE SEWERAGE SYSTEM WHILE THE LATER CHAPTERS DEAL  
WITH THE COSTS OF THE PROGRAM AND THE RECOMMENDATIONS  
FOR FINANCING AND MANAGING THE SYSTEM.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 739 704 8/1 6/6 13/2  
MARINE SCIENCE INST BAYOU LA BATRE ALA

ECOLOGICAL EFFECTS OF OFFSHORE CONSTRUCTION,

(U)

72 217P ROUNSEFELL, GEORGE A. ;  
CONTRACT: DACW72-71-C-0002

UNCLASSIFIED REPORT

AVAILABILITY: PAPER COPY AVAILABLE FROM MARINE  
SCIENCE INSTITUTE, BOX 667, BAYOU LA BATRE,  
ALA. 36509, \$2.00 FOR U.S., CANADA, AND  
MEXICO; \$3.00 FOR OTHERS.

SUPPLEMENTARY NOTE: PUB. AS JNL. OF MARINE SCIENCE,  
V2 N1 P1-89 AND A1-A119 1972.

DESCRIPTORS: (\*WATER POLLUTION, \*MARINE BIOLOGY),  
(\*CONSTRUCTION, WATER POLLUTION), (\*ESTUARIES, WATER  
POLLUTION), REVIEWS, ECOLOGY, OCEANS, ECONOMICS,  
CONTINENTAL SHELVES, FISHES, PARTICLES, SEDIMENTATION,  
EXPLOSION EFFECTS, WASTES(INDUSTRIAL), DISPOSAL, HEAT,  
SALINITY, ELECTRIC POWER PRODUCTION, AIRPORTS, FLOATING  
BODIES, NUCLEAR POWER PLANTS (U)

IDENTIFIERS: \*WATER POLLUTION EFFECTS(PLANTS), WATER  
POLLUTION EFFECTS(ANIMALS), WASTE DISPOSAL, OCEAN  
WASTE DISPOSAL, \*OFFSHORE STRUCTURES, \*COASTS,  
\*THERMAL POLLUTION (U)

THE REPORT EVALUATES CURRENT KNOWLEDGE OF THE  
PROBABLE ECOLOGICAL EFFECTS OF VARIOUS TYPE OF  
OFFSHORE CONSTRUCTION. THE GREATEST DANGER SEEM TO  
LIE IN THE PLACEMENT OF ARTIFICIAL ISLANDS WITHIN OR  
TOO CLOSELY ADJACENT TO ESTUARIES WHERE THEY CAN  
SIGNIFICANTLY EFFECT WATER EXCHANGE, AND IN THE  
PROLIFERATION OF WATER COOLED NUCLEAR POWER PLANTS.  
THE EFFECTS ON MARINE BIOLOGY AND WATER QUALITY ARE  
DISCUSSED. INCLUDED IN AN ANNOTATED BIBLIOGRAPHY  
OF 284 REFERENCES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 739 917 13/2  
ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG  
MISS

DISPOSAL OF VAULT WASTES, LAKE OUACHITA AND  
LAKE GREESON, ARKANSAS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAR 72 ZIP HARRISON, JOHN ;  
REPT. NO. AEWES-MISC-PAPER-Y-72-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WASTES(SANITARY ENGINEERING), DISPOSAL),  
FEASIBILITY STUDIES, SANITARY ENGINEERING, ARKANSAS,  
OXIDATION, ADSORPTION (U)  
IDENTIFIERS: \*WASTE DISPOSAL, \*LIQUID WASTE DISPOSAL,  
\*SEWAGE TREATMENT (U)

VARIOUS METHODS OF DISPOSING OF CONCENTRATED, HIGH-  
STRENGTH DOMESTIC SEWAGE FROM SIXTY-FIVE 2000-GAL  
VAULTS (34 AROUND LAKE OUACHITA AND 31 AROUND  
LAKE GREESON, ARKANSAS) ARE DISCUSSED. THE  
PURPOSE OF THE STUDY WAS TO FIND A TEMPORARY SOLUTION  
(I.E. SATISFACTORY FOR UP TO 5 YEARS) FOR THE  
DISPOSAL OF THE LAKE OUACHITA AND LAKE  
GREESON WASTES. POSSIBLE TREATMENT METHODS  
DISCUSSED INCLUDE: INSERTION INTO AN EXISTING  
SEWAGE TREATMENT SYSTEM; PACKAGE PLANTS PRECEDED BY  
A SEWAGE LAGOON; SEWAGE LAGOONS; ABSORPTION  
TRENCHES; SEWAGE IRRIGATION; AND BURIAL. USE OF  
THE LIQUEFYING/OXIDIZING AGENT ZEP-O-ZYME WAS  
STUDIED AND FOUND TO BE BENEFICIAL. THE MOST  
FEASIBLE SOLUTION APPROVED BY THE STATE OF  
ARKANSAS WAS TREATMENT BY A METHOD OF LAND  
DISPOSAL: EITHER ABSORPTION TRENCHES, IRRIGATION,  
BURIAL, OR A COMBINATION THEREOF. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 739 539 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT. SECTION 1. INTRODUCTION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 72 75p

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SECTION 2, AD-739  
532.

DESCRIPTORS: (\*OCEANS, WATER POLLUTION), (\*MARINE  
BIOLOGY, \*WATER POLLUTION), WASTES(SANITARY  
ENGINEERING), ATLANTIC OCEAN, WASTES(INDUSTRIAL), NEW  
YORK, DISPOSAL (U)  
IDENTIFIERS: \*WASTE DISPOSAL, \*NEW YORK BIGHT, \*OCEAN  
WASTE DISPOSAL, BENTHOS, \*SLUDGE DISPOSAL, SOLID WASTE  
DISPOSAL, SPOIL (U)

THE REPORT PRESENTS AN INTRODUCTION TO REPORTS  
(AD-739 531 TO AD-739 538) DESCRIBING DATA ON  
THE EFFECTS OF WASTE DISPOSAL ON THE MARINE  
ENVIRONMENT OF THE NEW YORK BIGHT. THE NEW  
YORK BIGHT IS AN AREA 10 MILES FROM NEW YORK  
HARBOR WHERE SOLID WASTE FROM THE NEW YORK  
CITY AREA IS DUMPED. RECOMMENDATIONS FOR STUDIES  
ON WASTE DISPOSAL PRACTICES IN THE NEW YORK  
HARBOR AREA ARE GIVEN. ALSO PRESENTED IS A  
RESEARCH PLAN TO FURTHER STUDY THE AREA.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 740 235 13/2 6/6  
COLORADO STATE UNIV FORT COLLINS DEPT OF MICROBIOLOGY

SEWAGE DISPOSAL AT POINT BARROW,  
ALASKA.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
FEB 72 SIP BOYD, WILLIAM L. IKLUBEK,  
BRIAN P. BOYD, JOSEPHINE W. ;  
REPT. NO: TR-1  
CONTRACT: N00014-67-A-0299-0015

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*ARCTIC REGIONS),  
ECOLOGY, BACTERIA, METABOLISM, TOILET FACILITIES, WATER  
POLLUTION, ALASKA (U)  
IDENTIFIERS: LIMNOLOGY, POINT BARROW (ALASKA), SEASONAL  
VARIATIONS, SEWAGE TREATMENT, \*SEWAGE DISPOSAL,  
INDICATOR SPECIES, LAGOONS (PONDS) (U)

A STUDY OF THE MIDDLE SALT LAGOON, POINT  
BARROW, ALASKA, THE SEWAGE DEPOSITORY OF THE  
NAVAL ARCTIC RESEARCH LABORATORY, WAS  
INITIATED. MICROBIAL ANALYSES WERE CARRIED OUT ON  
RUNOFF, LAGOON WATER, AND BOTTOM SEDIMENTS THROUGHOUT  
THE SUMMER. THE LAGOON AS AN INCOMPLETE ECOSYSTEM  
IS DISCUSSED, AND THE DYNAMIC CHANGES THAT TAKE PLACE  
THROUGHOUT THE SEASON ARE ANALYZED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 742 381 13/2 5/3  
RAND CORP SANTA MONICA CALIF

A COST ANALYSIS OF WASTE MANAGEMENT IN THE  
STEEL INDUSTRY,

(U)

JAN 72 19P TIHANSKY, DENNIS P. ;  
REPT. NO. P-4760

UNCLASSIFIED REPORT

DESCRIPTORS: (\*STEEL INDUSTRY, \*WASTES(INDUSTRIAL)),  
(\*AIR POLLUTION, WASTES(INDUSTRIAL)), (\*WATER POLLUTION,  
WASTES(INDUSTRIAL)), ECONOMICS, COSTS, CONTROL (U)  
IDENTIFIERS: CONTROL, WATER POLLUTION, \*WATER  
POLLUTION ECONOMICS, \*AIR POLLUTION ECONOMICS, AIR  
POLLUTION, CONTROL, INDUSTRIAL WASTE TREATMENT (U)

THE REPORT PRESENTS DATA ON THE COST OF POLLUTION  
CONTROL FOR STEEL COMPANIES. THE COST FIGURES FOR  
A SINGLE EASTERN PLANT FROM 1951-1967 ARE LISTED.  
ALSO PRESENTED ARE WATER POLLUTION CONTROL COSTS  
FROM A NUMBER OF COMPANIES. AN ANALYSIS OF THESE  
COSTS TOWARD MEETING FUTURE REGULATIONS IS  
DISCUSSED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 743 101 13/2 8/1 8/10  
CATHOLIC UNIV OF AMERICA WASHINGTON D C INST OF OCEAN  
SCIENCE AND ENGINEERING

A LITERATURE SURVEY OF OCEAN POLLUTION, (U)

MAY 71 116P SHIH, H. H. ;  
REPT. NO. 71-6  
CONTRACT: N00014-69-A-0432

UNCLASSIFIED REPORT

DESCRIPTORS: (\*OCEANS, \*WATER POLLUTION), REVIEWS,  
SOURCES, WASTES(INDUSTRIAL), WASTES(SANITARY  
ENGINEERING), RADIOACTIVE WASTES, HEAT, MARINE BIOLOGY,  
ECOLOGY, LAW, CONTROL, CLEANING, SCIENTIFIC RESEARCH (U)  
IDENTIFIERS: CONTROL, WATER POLLUTION, WATER POLLUTION  
EFFECTS(PLANTS), WATER POLLUTION EFFECTS(ANIMALS),  
\*OCEAN WASTE DISPOSAL, OIL POLLUTION CONTROL, \*OILS,  
\*POLLUTION (U)

ANY CHANGE IN WATER QUALITY WHICH HAS AN ADVERSE  
EFFECT ON A BENEFICIAL USE OF THE MARINE WATERS, SUCH  
AS THE PROPAGATION OF FISH, SHELLFISH, WATERFOWL, AND  
OTHER AQUATIC ANIMALS, PROPAGATION OF KELP AND OTHER  
ATTACHED ALGAE, RECREATIONAL AND AESTHETIC ENJOYMENT,  
MUNICIPAL WATER SUPPLY, INDUSTRIAL WATER SUPPLY,  
NAVIGATION, SCIENTIFIC RESEARCH, AND OTHERS,  
CONSTITUTES AN OCEAN POLLUTION PROBLEM. THE PRESENT  
WORK IS A STATE OF THE ART SURVEY OF THE PAST STUDIES  
ON THE PROBLEMS OF OCEAN POLLUTION AND TO IDENTIFY  
AREAS IN WHICH THERE WERE NOTABLE DEFICIENCIES IN  
KNOWLEDGE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 743 764 13/2 13/10  
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

DESCRIPTIVE MODEL OF A SHIPBOARD ECOLOGICAL  
SYSTEM.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
JUN 72 66P MINER, JOHN ODGERS, JR;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*SHIPS), COSTS,  
MATHEMATICAL MODELS, MONTE CARLO METHOD, DESIGN, SEWAGE,  
COMPUTER PROGRAMS, THESES (U)

IDENTIFIERS: \*SEWAGE TREATMENT, \*SHIPBOARD SEWAGE  
TREATMENT SYSTEMS (U)

AN INVESTIGATION INTO THE PROBLEMS OF ECONOMICALLY  
PROCESSING SEWAGE ON BOARD NAVAL SHIPS RESULTED IN  
THE DEVELOPMENT OF TWO COMPUTER SIMULATIONS EMPLOYING  
MONTE CARLO ANALYSIS TO DESCRIBE THE GENERATION  
OF SEWAGE. SIMULATION ONE WAS BASED ON A NON-  
HOMOGENEOUS POISSON PROCESS. FOR SIMULATION TWO,  
AN EMPIRICAL DISTRIBUTION DESCRIBING THE ARRIVAL  
BEHAVIOR OF SEWAGE TO THE HOLDING/PROCESSING UNIT  
OVER A 24 HOUR PERIOD WAS APPLIED TO KNOWN DATA ON  
SEWAGE GENERATION. RESULTS OF THE TWO SIMULATIONS  
WERE COMPATIBLE WITH ONE ANOTHER. ASIDE FROM  
POINTING OUT A MOST FEASIBLE COMBINATION OF HOLDING  
TANK CAPACITY, PROCESSOR RATE AND PROCESSING POLICY,  
THE SIMULATIONS ALSO INDICATED THAT A REVISION OF THE  
NAVY'S DESIGN PARAMETER FOR THE DAILY PER CAPITA  
SEWAGE GENERATION RATE WAS IN ORDER. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 743 936 8/1 13/2  
NATIONAL MARINE FISHERIES SERVICE HIGHLANDS N J SANDY HOOK  
LAB

THE EFFECTS OF WASTE DISPOSAL IN THE NEW  
YORK BIGHT.

(U)

DESCRIPTIVE NOTE: INFORMAL REPT. NO. 2 (FINAL).  
APR 72 82P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, \*MARINE BIOLOGY),  
(\*OCEANS, WATER POLLUTION), ATLANTIC OCEAN,  
WASTES(INDUSTRIAL), WASTES(SANITARY ENGINEERING),  
ECOLOGY, TOXICITY, DISPOSAL, CRUSTACEA, METALS,  
PLANKTON, FISHES, MICROORGANISMS (U)  
IDENTIFIERS: WASTE DISPOSAL, WATER POLLUTION  
EFFECTS(ANIMALS), WATER POLLUTION EFFECTS(PLANTS),  
\*NEW YORK BIGHT, \*OCEAN WASTE DISPOSAL, BENTHOS,  
SLUDGE DISPOSAL, SOLID WASTE DISPOSAL, SPOIL (U)

THE REPORT SUMMARIZES RESULTS OF STUDIES CONDUCTED  
TO OBTAIN DATA TO ASSESS THE EFFECTS OF WASTE  
DISPOSAL ON THE MARINE ENVIRONMENT OF THE NEW  
YORK BIGHT. THE STUDIES INVOLVED THE  
FOLLOWING: BENTHIC STUDIES; BENTHIC  
MACROFAUNA; AND MEIOFAUNA; CRUSTACEANS; DISEASE;  
HEAVY METALS; COLIFORM BACTERIA; ZOOPLANKTON;  
BOTTOM-DWELLING FINFISHES; CHEMICAL ANALYSES; AND  
NEARSHORE WATER CIRCULATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 744 192 13/2  
CENTER FOR NAVAL ANALYSES ARLINGTON VA

COST ANALYSIS OF OPTIONAL METHODS OF  
SHIPBOARD DOMESTIC WASTE DISPOSAL, (U)

JAN 72 31P PIERSALL, CHARLES H. , JR. ;  
BORGSTROM, ROBERT E. ;  
REPT. NO. CNA-PROFESSIONAL PAPER-91

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*SHIPS), COSTS,  
STORAGE TANKS, HANDLING, FEASIBILITY STUDIES, SEWAGE,  
DISPOSAL (U)  
IDENTIFIERS: OPERATING COSTS, \*SEWAGE TREATMENT,  
\*SHIPBOARD SEWAGE TREATMENT SYSTEMS, COST COMPARISON (U)

THE PROBLEM OF SEWAGE AND WASTE DISPOSAL FROM U.  
S. NAVAL SHIPS IS THE SUBJECT OF THE REPORT.  
THE PAPER DISCUSSED FOUR OPTIONAL METHODS FOR THE  
DISPOSAL OF SHIPBOARD DOMESTIC WASTES. THE  
ANNUALIZED INVESTMENT AND OPERATING COSTS ASSOCIATED  
WITH THE IMPLEMENTATION OF EACH OF THE OPTIONS ARE  
PRESENTED. THE MODEL CONSIDERS NON-NUCLEAR, SEA-  
GOING SURFACE SHIPS WITH A MANNING LEVEL GREATER THAN  
50 MEN. ESTIMATES WERE DEVELOPED ON A PER SHIP PER  
CLASS BASIS AND AGGREGATED FOR THE TOTAL SURFACE  
FLEET. THIS APPROACH PERMITS THE INVESTIGATION OF  
DIFFERENT COMBINATIONS OF THE OPTIONS BY MERELY  
SPECIFYING THE NUMBER AND TYPE OF SHIPS TO BE  
CONSIDERED IN ANY OPTION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 744 339 13/2  
HITTMAN ASSOCIATES INC COLUMBIA MD

SYSTEM STUDY, VACUUM SEWAGE  
COLLECTION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUN-DEC 71,  
DEC 71 114P WALLER, ROBERT ; MALLORY,  
CHARLES W. ;  
REPT. NO. HIT-510  
CONTRACT: N62399-71-C-0008  
PROJ: YF38.534.003  
TASK: 01009  
MONITOR: NCEL CR-72.015

UNCLASSIFIED REPORT

DESCRIPTORS: (SANITARY ENGINEERING, COLLECTING  
METHODS), SEWAGE, VACUUM, GRAVITY, NAVAL SHORE  
FACILITIES, DESIGN, STORAGE TANKS, COSTS  
IDENTIFIERS: COMPARISON, COST COMPARISON

(U)

(U)

AN EFFECTIVENESS/COST COMPARISON WAS MADE BETWEEN GRAVITY SEWER SYSTEMS AND VACUUM SEWER SYSTEMS FOR USE IN NAVY ADVANCED BASES. THE VACUUM SYSTEMS CONSIDERED WERE SINGLE PIPE SYSTEM WHERE VACUUM TOILETS ARE CONNECTED DIRECTLY TO A VACUUM SEWER WHILE THE REMAINING WASTES DRAIN BY GRAVITY TO A BUILDING VACUUM VALVE WHICH INTERCONNECTS TO THE VACUUM SEWER; DUAL PIPE SYSTEM IN WHICH THE WASTES FROM VACUUM TOILETS ARE CONVEYED IN A SEPARATE VACUUM SEWER FROM THE OTHER WASTES; AND COMBINED SYSTEM WHERE CONVENTIONAL FIXTURES ARE USED AND ALL WASTES DRAIN TO A BUILDING VACUUM VALVE AND THEN ARE TRANSPORTED IN A VACUUM SEWER. ESTIMATES OF THE DAILY AND PEAK WASTEWATER FLOWS WERE DEVELOPED FOR A 500-MAN BASE FOR BOTH VACUUM TOILETS AND FOR LOW FLUSH WATER TOILETS. DESIGNS AND LAYOUTS WERE PREPARED FOR BOTH GRAVITY AND VACUUM SEWER SYSTEMS FOR THE SAME BASE CONFIGURATIONS AND OTHER DESIGN CONDITIONS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 745 594 20/12 18/7  
GENERAL ELECTRIC CO SCHENECTADY N Y RESEARCH AND  
DEVELOPMENT CENTER

THE THERMOMIGRATION OF BIPHASE VAPOR-LIQUID  
DROPLETS IN SOLIDS, (U)

AUG 71 12P ANTHONY, T. R. ; CLINE, H.  
E. I  
CONTRACT: DAHCO4-69-C-0070  
PROJ: DA-2-0-061102-B-32-D  
MONITOR: AROD 8156:6-MC

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN ACTA METALLURGICA, V20 P247-  
255 1972.

SUPPLEMENTARY NOTE: SUMMARIES IN FRENCH AND  
GERMAN.

DESCRIPTORS: (\*SALTS, \*DIFFUSION), (\*CRYSTAL DEFECTS,  
SALTS), (\*RADIOACTIVE WASTES, DISPOSAL), BRINES,  
BUBBLES, PHASE STUDIES, CHLORIDES, POTASSIUM COMPOUNDS,  
EVAPORATION, INTERFACIAL TENSION, WATER VAPOR,  
IMPURITIES (U)  
IDENTIFIERS: BRINE, POTASSIUM CHLORIDE, SALT MINES,  
•INCLUSIONS, GRADIENTS, TEMPERATURE (U)

THE THERMOMIGRATION OF BIPHASE VAPOR-LIQUID  
DROPLETS WAS STUDIED IN KCL AS A FUNCTION OF  
DROPLET SIZE AND THE RELATIVE PROPORTIONS OF GAS AND  
LIQUID PHASES IN THE DROPLETS. DROPLETS CONTAINING  
MORE THAN 10 VOL. % OF GAS MIGRATED DOWN THERMAL  
GRADIENTS TOWARD LOWER TEMPERATURES IN CONTRAST TO  
THE USUAL THERMOMIGRATION BEHAVIOR OF SIMPLE GAS OR  
LIQUID INCLUSIONS UP THERMAL GRADIENTS IN SOLIDS.  
BY CONSIDERING VISCOUS GAS FLOW, VAPOR DIFFUSION,  
LIQUID DIFFUSION, EVAPORATION AND CONDENSATION AND  
LIQUID CURRENTS DRIVEN BY SURFACE TENSION GRADIENTS,  
THE OBSERVED THERMOMIGRATION BEHAVIOR OF BIPHASE  
VAPOR-LIQUID DROPLETS CAN BE ADEQUATELY EXPLAINED.  
THE RESULTS OF THIS AND PREVIOUS INVESTIGATIONS WAS  
APPLIED TO THE THERMOMIGRATION PROBLEMS ASSOCIATED  
WITH THE PROPOSED STORAGE OF HIGHLY RADIOACTIVE WASTE  
PRODUCTS IN ABANDONED SALT MINES. THE  
THERMOMIGRATION OF NATURALLY OCCURRING BRINE DROPLETS  
IN A SALT FORMATION UP THERMAL GRADIENTS GENERATED BY  
THE VIGOROUS SELF HEATING OF THESE NUCLEAR WASTES IS  
SHOWN TO BE CAPABLE OF CAUSING AN UNDESIRABLE INFLOW  
OF WATER INTO THE NUCLEAR WASTE CRYPTS. DROPLET  
MIGRATION ALONG THE GRAVITATIONAL FIELD OR ALONG THE  
WEAK NATURAL THERMAL GRADIENT OF THE EARTH WOULD BE  
PREVENTED BY THE TRAPPING OF DROPLETS ON GRAIN (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 746 858 6/12 13/2  
NAVAL FACILITIES ENGINEERING COMMAND WASHINGTON D C

SOLID WASTE HANDLING SYSTEMS FOR NAVY  
HOSPITALS.

(U)

72 127P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HOSPITALS, \*SANITARY ENGINEERING),  
WASTES(SANITARY ENGINEERING), DESIGN, COSTS, CONVEYORS,  
FOOD, SEWAGE, BAGS, INCINERATORS (U)  
IDENTIFIERS: COMPACTION EQUIPMENT, REFUSE DISPOSAL,  
\*SOLID WASTE DISPOSAL, GARBAGE GRINDERS (U)

THE REPORT PRESENTS AN EVALUATION OF VARIOUS TYPES  
OF MANUAL AND AUTOMATED COLLECTING AND PROCESSING  
SYSTEMS FOR HANDLING SOLID WASTES FROM PATIENT AND  
OTHER AREAS OF NAVY HOSPITALS. ALSO THE MOST  
EFFICIENT AND COST EFFECTIVE WASTE HANDLING SYSTEM  
FOR NAVY HOSPITALS WAS DETERMINED. PATHOLOGICAL  
AND KITCHEN WASTES WERE NOT INCLUDED IN THE ANALYSIS.  
THE STUDY IS BASED UPON HOSPITALS OF NEW  
CONSTRUCTION. HOSPITAL SIZES WERE ESTABLISHED AS  
100 TO 600 BEDS, SPECIFICALLY 100; 250; 400; AND 600  
BEDS. THE PAPER IS BROKEN DOWN INTO THE FOLLOWING  
GROUPS: PRE-COLLECTION; COLLECTION -- CARTS;  
COLLECTION -- BAGS; TRANSPORTATION--GRAVITY  
CHUTES, PNEUMATIC CHUTES, CONVEYORS, ELEVATORS;  
PROCESSING--SHREDDING, COMPACTION, INCINERATION;  
SYSTEM BUDGET FIGURES BY HOSPITAL SIZE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 746 960 13/2 8/1 6/6  
SMITHSONIAN INSTITUTION WASHINGTON D C OCEANOGRAPHY AND  
LIMNOLOGY PROGRAM

SMITHSONIAN ADVISORY COMMITTEE REPORT ON  
STUDIES OF THE EFFECTS OF WASTE DISPOSAL IN  
THE NEW YORK BIGHT, (U)

JUL 72 68P BUZAS, M. A. ; CARPENTER, J.  
H. ; KETCHUM, B. H. ; MCHUGH, J. H. ; NORTON,  
V. J. ;  
CONTRACT: DACW72-70-C-0016

UNCLASSIFIED REPORT

DESCRIPTORS: (\*OCEANS, \*WATER POLLUTION), (\*MARINE  
BIOLOGY, WATER POLLUTION), REVIEWS, WASTES(SANITARY  
ENGINEERING), WASTES(INDUSTRIAL), ATLANTIC OCEAN,  
DISPOSAL, NEW YORK, OCEAN BOTTOM, CHEMICAL ANALYSIS,  
BACTERIA, FISHES, SEWAGE, PLANKTON, ECOLOGY, METALS (U)  
IDENTIFIERS: WATER POLLUTION EFFECTS(ANIMALS), \*WASTE  
DISPOSAL, WATER POLLUTION EFFECTS(PLANTS), \*NEW YORK  
BIGHT, NUTRITION, \*OCEAN WASTE DISPOSAL, BENTHOS,  
COLIFORM BACTERIA, RECOMMENDATIONS, SLUDGE DISPOSAL,  
SOLID WASTE DISPOSAL, SPOIL, DREDGING (U)

THE REPORT REVIEWS SIX DOCUMENTS ON OCEAN WASTE  
DISPOSAL OFF OF NEW YORK HARBOR IN TERMS OF  
SCIENTIFIC CONTENT AND MEANING, THE EFFECTS OF WASTE  
DISPOSAL ON THE NEW YORK BIGHT. IT ALSO  
SUGGESTS CHANGES IN PRESENT DISPOSAL OPERATIONS, AND  
RECOMMENDS FURTHER RESEARCH. THE SIX REPORTS  
REVIEWED WERE: PRELIMINARY ANALYSES OF URBAN  
WASTES, NEW YORK. METROPOLITAN REGION;  
ANALYSIS OF DREDGED WASTES, FLY ASH, AND  
WASTE CHEMICALS - N.Y. METROPOLITAN  
REGION (AD 734 337); SURVEY OF MARINE  
WASTE DEPOSITS, N.Y. METROPOLITAN REGION  
(AD 723 431); THE MARINE DISPOSAL OF  
SEWAGE SLUDGE AND DREDGE SPOIL IN THE  
WATERS OF THE N.Y. BIGHT (AD 722 791);  
OCEAN WASTE DUMPING OPERATIONS MONITORING;  
AND THE EFFECTS OF WASTE DISPOSAL IN THE  
NEW YORK BIGHT (AD 730 531 THROUGH AD 739  
539). (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 747 025 13/2 15/5  
ILLINOIS UNIV URBANA

USAF MOBILITY PROGRAM WASTEWATER TREATMENT  
SYSTEM.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 19 JUN 70-18 FEB 72,  
APR 72 220P SNOEYINK, V. L. ; MARKUS, F.

I. ; SHIN, B. S. ; LOWE, C. W. ;

CONTRACT: F29601-70-C-0087

PROJ: AF-3783

MONITOR: AFWL TR-71-169

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MILITARY FACILITIES, \*SANITARY  
ENGINEERING), TACTICAL WARFARE, PHOTOGRAPHY, WATER  
POLLUTION, CONTROL, SEWAGE, GARBAGE, DISPOSAL, SOURCES,  
CLEANING COMPOUNDS, HOSPITALS, INCINERATORS, MOBILE,  
AIRBORNE (U)

IDENTIFIERS: WASTE DISPOSAL, WATER TREATMENT, WATER,  
\*WATER RECLAMATION, AIR MOBILITY, BARE BASE PROJECT,  
DRINKING WATER, \*SEWAGE TREATMENT, SLUDGE DISPOSAL,  
SOLID WASTE DISPOSAL (U)

THE U. S. AIR FORCE BARE BASE  
MOBILITY PROGRAM INVOLVES A HIGHLY MOBILE FORCE  
OF 1000 TO 6000 MEN WHO CAN BE MOVED ANY PLACE IN THE  
WORLD ON A VERY SHORT NOTICE. THE SUPPORT SYSTEMS  
FOR THIS FORCE INCLUDE A WASTEWATER TREATMENT SYSTEM  
WHICH CAN TREAT WASTEWATERS TO THE REQUIRED DEGREE  
PRIOR TO DISCHARGE TO THE ENVIRONMENT. THE  
WASTEWATERS WHICH ARE GENERATED AT A BARE BASE  
INCLUDE PHOTOGRAPHIC, AIRCRAFT AND VEHICLE WASHRACK,  
HUMAN, SHOWER AND LAVATORY, HOSPITAL, DINING ROOM,  
KITCHEN AND LAUNDRY WASTEWATERS. A WASTE TREATMENT  
SYSTEM WHICH INVOLVES (1) SEPARATE COLLECTION AND  
INCINERATION OF HUMAN WASTE, AND (2) TREATMENT OF  
ALL WASTEWATERS EXCEPT CONCENTRATED PHOTOGRAPHIC  
WASTES IN A SYSTEM WHICH INCLUDES CHEMICAL  
CLARIFICATION, FLOTATION, FILTRATION, ACTIVATED  
CARBON ADSORPTION AND CHLORINATION IS RECOMMENDED.  
THE SLUDGE, CONCENTRATED PHOTOGRAPHIC WASTE AND THE  
SKIMMINGS FROM THE AIRCRAFT AND VEHICLE WASHRACK  
WASTES ARE INCINERATED AND THE ASH FROM THE  
INCINERATOR IS DISPOSED OF ON LAND. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 747 065 13/2 13/10  
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A MATHEMATICAL FORMULATION FOR SELECTING  
HOLDING-TANK-PROCESSOR REQUIREMENTS FOR  
SHIPBOARD SEWAGE TREATMENT.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JUL 72 26P THOMAS, M. U. ;  
REPT. NO. NPS-55T072071A

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*SHIPS), DECISION  
MAKING, STORAGE TANKS, SEWAGE, MATHEMATICAL MODELS,  
DESIGN

(U)

IDENTIFIERS: POISSON PROCESSES, \*SEWAGE TREATMENT,  
\*SHIPBOARD SEWAGE TREATMENT SYSTEMS, FLOW RATE,  
TRADEOFFS

(U)

THE PAPER DESCRIBES A FORMULATION OF THE PROBLEM  
THAT SYSTEMS DESIGNERS FACE IN SELECTING A  
COMBINATION OF HOLDING TANK AND PROCESSOR FOR  
SHIPBOARD SEWAGE TREATMENT SYSTEMS. TWO DECISION  
MODELS ARE DISCUSSED WITHIN THIS FRAMEWORK. IN ONE  
CASE THE GENERATION OF SEWAGE, ABOARD SHIPS, IS  
ASSUMED TO CONSIST OF DETERMINISTIC ARRIVAL STREAMS.  
IN A SECOND MODEL, SEWAGE GENERATION IS ASSUMED TO  
BEHAVE IN ACCORDANCE WITH A POISSON PROCESS.  
ALLOWANCES FOR MAINTENANCE AND RELIABILITY ARE  
DISCUSSED. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 747 374 13/2

STANFORD UNIV CALIF DEPT OF CIVIL ENGINEERING

AN ANALYSIS OF ENVIRONMENTAL STATEMENTS FOR  
CORPS OF ENGINEERS WATER PROJECTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

JUN 72 146P

ORTOLANO, LEONARD ; HILL,

WILLIAM W. ;

CONTRACT: DACW31-71-C-0127

MONITOR: IWR 72-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ENVIRONMENT, REPORTS), COASTAL REGIONS,  
DAMS, WASTES(INDUSTRIAL), DISPOSAL, FLOODS, WATER  
POLLUTION, ECOLOGY

(U)

IDENTIFIERS: WASTE DISPOSAL, WATER RESOURCES,  
ENVIRONMENTS, POLICIES, UNITED STATES GOVERNMENT,  
\*ARMY CORPS OF ENGINEERS, ASSESSMENT, PROJECTS, SHORE  
PROTECTION, FLOOD CONTROL, GOVERNMENT POLICIES, SPOIL,  
DREDGING, \*ENVIRONMENTAL IMPACT STATEMENTS,  
\*ENVIRONMENTS, \*SURVEYS

(U)

THE PUBLICATION PRESENTS THE RESULTS OF AN  
INTENSIVE ANALYSIS OF 234 CORPS OF ENGINEERS  
ENVIRONMENTAL IMPACT STATEMENTS PREPARED IN  
ACCORDANCE WITH SEC. 102 (2)(C) OF THE  
NATIONAL ENVIRONMENTAL POLICY ACT (NEPA).  
THE ANALYSIS INCLUDES A DETAILED CATALOG AND  
SUMMARY OF IMPACTS INCLUDED IN THE STATEMENTS FOR:  
PROJECTS ON COASTAL WATERS INCLUDING DREDGING,  
SPOIL DISPOSAL, BREAKWATERS, JETTIES AND GROINS,  
REVELEMENTS, DIKES AND BARRIERS; AND PROJECTS ON  
INLAND WATERS INCLUDING CHANNELIZATION, DAMS AND  
RESERVOIRS, LEVEES, DREDGING SPOIL DISPOSAL,  
CONSTRUCTION AND OTHER MISCELLANEOUS STRUCTURES AND  
ACTIVITIES. IN ADDITION, THE ANALYSIS CATALOGS AND  
SUMMARIZES THE IMPACTS OF VARIOUS PROJECT PURPOSES.  
A SUMMARY OF THE COVERAGE OF OTHER POINTS REQUIRED  
BY SEC 102(2)(C) OF NEPA IS ALSO INCLUDED.  
THE PROPER ROLE OF ENVIRONMENTAL STATEMENTS IS  
SUGGESTED AND, WITHIN THAT CONTEXT, AN ASSESSMENT OF  
THE 234 STATEMENTS IS RENDERED, TOGETHER WITH  
SUGGESTIONS FOR IMPROVEMENT. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 748 401 18/7

COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

DISPOSAL OF RADIOACTIVE WASTE MATERIAL IN THE  
ICE CAPS OF THE WORLD (BESEITIGUNG  
RADIOAKTIVER ABFALLSUBSTANZEN IN DEN EISKAPPEN  
DER ERDE),

(U)

AUG 72 21P PHILBERTH, P. ;  
REPT. NO. CRREL-TL361

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DRAFT TRANS. OF SCHWEIZERISCHE  
ZEITSCHRIFT FÜR HYDROLOGIE, V22 N1 P263-284 1961.

DESCRIPTORS: (\*RADIOACTIVE WASTES, DISPOSAL), FISSION  
PRODUCTS, RADIOACTIVE ISOTOPES, GREENLAND, ICELAND,  
DIFFUSION, POLAR REGIONS  
IDENTIFIERS: TRANSLATIONS

(U)

(U)

DISPOSAL OF RADIOACTIVE WASTE MATERIAL IN THE ICE  
CAPS OF THE WORLD--TRANSLATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 749 350 13/2  
NAVAL RESEARCH LAB WASHINGTON D C OPERATIONS RESEARCH  
BRANCH

OXYGEN DIFFUSION IN WET AIR OXIDATION  
PROCESSES.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,  
AUG 72 16P WILLMAN, W. W. ;  
REPT. NO. 72-4  
PROJ: NRL-801-14, SF35-432-012  
MONITOR: NRL 7443

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*SHIPS), (\*SEWAGE,  
•OXIDATION), AIR, DIFFUSION, KINETIC THEORY (U)  
IDENTIFIERS: OXIDATION, CHEMICAL OXYGEN DEMAND,  
•SEWAGE TREATMENT, \*SHIPBOARD SEWAGE TREATMENT  
SYSTEMS, SLUDGE DISPOSAL (U)

THE DIFFUSION OF DISSOLVED OXYGEN IS AN ESSENTIAL  
STEP IN WET AIR OXIDATION PROCESSES. THE REPORT IS  
AN INVESTIGATION OF THE CONDITIONS UNDER WHICH THIS  
DIFFUSION STEP BECOMES A LIMITING FACTOR FOR SUCH  
PROCESSES WHICH USE AN AIR BUBBLE COLUMN REACTOR FOR  
SEWAGE TREATMENT. THE RESULTS SHOW THAT THE  
IMPORTANCE OF OXYGEN DIFFUSION AS A RATE-LIMITING  
STEP DEPENDS MAINLY ON REACTION TEMPERATURE AND  
PRESSURE, CHEMICAL OXYGEN DEMAND, BUBBLE DIAMETER,  
AIR SUPPLY RATE, AND REACTOR HEIGHT. THE  
IMPLICATIONS OF THESE RESULTS FOR SHIPBOARD WASTE  
TREATMENT PROCESSES CURRENTLY BEING CONSIDERED BY THE  
NAVY ARE EXAMINED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 749 409 13/2  
GRUMMAN AEROSPACE CORP BETHPAGE N Y RESEARCH DEPT

ADVANCES IN SOLID WASTE TREATMENT  
TECHNOLOGY.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,  
AUG 72 79P HERSHAFT, ALEX ;  
REPT. NO. RE-437J

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, SOLIDS), REVIEWS,  
STORAGE, HANDLING, COLLECTING METHODS, TRANSPORTATION,  
INCINERATORS, PYROLYSIS, MATERIAL SEPARATION, GARBAGE,  
METALS, PLASTICS, GLASS, WASTES(INDUSTRIAL),  
DISPOSAL

(U)

IDENTIFIERS: \*WASTE RECYCLING, \*WASTE DISPOSAL,  
MATERIALS RECOVERY, AGRICULTURAL WASTES, CLASSIFIERS,  
PIPELINE TRANSPORTATION, \*SOLID WASTE DISPOSAL, HEAT  
RECOVERY, SPOIL, TAILINGS

(U)

THIS REPORT PRESENTS A CRITICAL SURVEY OF RECENT  
ADVANCES IN SOLID WASTE TREATMENT TECHNOLOGY AND  
DIRECTS THE READER'S ATTENTION TO THE DEFINITIVE  
SOURCES OF INFORMATION IN THIS AREA. SPECIFIC  
TOPICS COVERED INCLUDE STORAGE, REMOVAL,  
TRANSPORTATION, FRAGMENTATION, SORTING, BULK  
REDUCTION, CONVERSION, RECLAMATION, AND DISPOSAL.  
(AUTHOR-PL)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 750 351 13/2  
ARMY NATICK LABS MASS

DISPOSAL OF CELLULOSIC WASTE MATERIALS BY  
ENZYMATIC HYDROLYSIS,

(U)

72 16P MANDELS, MARY ; HONTZ, LLOYD ;  
BRANDT, DIXON ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CELLULOSE, \*DECOMPOSITION), (\*ENZYMES,  
CELLULOSE), DISPOSAL, WASTES(INDUSTRIAL),  
WASTES(SANITARY ENGINEERING), GLUCOSE, HYDROLYSIS,  
PRODUCTION, FUNGI, COTTON, PAPER, WOOD (U)  
IDENTIFIERS: \*WASTE DISPOSAL, AGRICULTURAL WASTES,  
\*BIODETERIORATION, \*SOLID WASTE DISPOSAL, TRICHODERMA  
VIRIDE (U)

THE PAPER SUMMARIZES STUDIES ON POLLUTION ABATEMENT  
BY ENZYMATIC CONVERSION OF WASTE CELLULOSE TO USEFUL  
PRODUCTS. CELLULOSE IS THE MAJOR COMPONENT OF CARD  
BOARD BOXES, KRAFT PAPER, PAPER BAGS, CORRESPONDENCE  
PAPER, AND NEWSRING, OR ANY OTHER PRODUCT OF WOOD  
PULP OR COTTON. ONE APPROACH HAS BEEN THE DIRECT  
CONVERSION OF CELLULOSE TO ANIMAL PROTEIN BY RUMINANT  
FEEDING, OR TO SINGLE CELL PROTEIN BY GROWING  
BACTERIA OR FUNGI ON CELLULOSE. THE AUTHORS'  
APPROACH HAS BEEN A DIFFERENT ONE. CELLULOSE WAS  
CONVERTED TO GLUCOSE BY ACID OR ENZYMATIC  
HYDROLYSIS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 752 122 13/2 6/5  
ARMY MEDICAL ENVIRONMENTAL ENGINEERING RESEARCH UNIT  
EDGEWOOD ARSENAL MD

PROBLEM DEFINITION STUDY: EVALUATION OF  
HEALTH AND HYGIENE ASPECTS OF LAND DISPOSAL  
OF WASTEWATER AT MILITARY INSTALLATIONS. (U)

AUG 72 40P SORBER, CHARLES A. ; SCHAUB,  
STEPHEN A. ; GUTER, KURT J. ;  
REPT. NO. USAMEERU-73-02  
PROJ: DA-3-A-062110-A-806  
TASK: 3-A-062110-A-80600

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SEWAGE, \*IRRIGATION SYSTEMS), (\*MILITARY  
FACILITIES, SANITARY ENGINEERING), (\*WATER POLLUTION,  
SEWAGE), PUBLIC HEALTH, STANDARDS, SPRAYS, AIR  
POLLUTION, METALS, PESTICIDES, NITROGEN COMPOUNDS,  
BACTERIA, AEROSOLS (U)  
IDENTIFIERS: LIQUID WASTE DISPOSAL, \*SEWAGE DISPOSAL,  
TRACE ELEMENTS (U)

THE UNITED STATES ARMY IS PRESENTLY USING AND  
IS PLANNING TO EXPAND ITS USE OF VARIOUS MODES OF  
LAND DISPOSAL OF TREATED SEWAGE AT INSTALLATIONS  
WITHIN THE UNITED STATES. THE REPORT REVIEWS  
THE CONSIDERATIONS INVOLVED IN USING SEWAGE FOR  
IRRIGATION PURPOSES. DISCUSSED ARE PHYSICAL,  
BIOLOGICAL, AND CHEMICAL ENVIRONMENTAL FACTORS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 752 123 7/3 13/2  
ARMY MEDICAL ENVIRONMENTAL ENGINEERING RESEARCH UNIT  
EDGEWOOD ARSENAL MD

METHODS OF CHEMICAL DEGRADATION OF PESTICIDES  
AND HERBICIDES - A REVIEW, (U)

OCT 72 36P DENNIS, WILLIAM H. , JR;  
REPT. NO. USAMEERU-73-04  
PROJ: DA-3-A-U62110-A-806  
TASK: 3-A-U62110-A-80600

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PESTICIDES, \*DECOMPOSITION),  
(\*HALOGENATED HYDROCARBONS, DECOMPOSITION), (\*ORGANIC  
PHOSPHORUS COMPOUNDS, DECOMPOSITION), REVIEWS,  
INSECTICIDES, HERBICIDES, OXIDATION, HYDROLYSIS,  
PHOTOLYSIS, MOLECULAR STRUCTURE, CARBAMIC ACID, ETHERS,  
CHLORINE COMPOUNDS (U)  
IDENTIFIERS: \*WASTE DISPOSAL, \*LIQUID WASTE DISPOSAL,  
BIODETERIORATION, \*CARBAMATES, \*CHLORINE ORGANIC  
COMPOUNDS, DECHLORINATION (U)

DEGRADATION OF PESTICIDES, HERBICIDES AND  
STRUCTURALLY RELATED COMPOUNDS BY DECHLORINATION,  
PHOTOCHEMICAL REACTIONS, CLEAVAGE OF ETHERS,  
OXIDATION, BIODEGRADATION AND HYDROLYSIS ARE  
REVIEWED. DUE TO THE GREAT VARIATION IN CHEMICAL  
STRUCTURE, REACTIVITY AND SOLUBILITY, NO SINGLE  
METHOD OF CHEMICAL DEGRADATION IS PRESENTLY  
AVAILABLE. FOUR APPROACHES TO CHEMICAL DEGRADATION  
ARE PROPOSED FOR THE DETOXIFICATION OF THE ENTIRE  
SPECTRUM OF PESTICIDES AND HERBICIDES. THE METHODS  
PROPOSED ARE HYDROLYSIS, DECHLORINATION, PHOTOLYSIS  
AND OXIDATION. RECOMMENDATIONS ARE MADE FOR THE  
STUDY AND DEVELOPMENT OF THE PROPOSED DEGRADATIVE  
METHODS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 752 132 13/2 13/13  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

WASTEWATER MANAGEMENT BY DISPOSAL ON THE  
LAND.

(U)

DESCRIPTIVE NOTE: SPECIAL REPT.,  
MAY 72 190P REED, SHERWOOD C. ; MURRMANN,  
P. ; KOUTZ, F. ; RICHARD, W. ; HUNT, P. ;  
REPT. NO. CRREL-SR-171

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SEWAGE, DISPOSAL), REVIEWS, SOIL  
MECHANICS, IRRIGATION SYSTEMS, SITE SELECTION,  
MICROORGANISMS, NITROGEN COMPOUNDS, PHOSPHORUS  
COMPOUNDS, METALS, HYDROLOGY, WEATHER (U)  
IDENTIFIERS: \*WASTE WATER, WATER, LIQUID WASTE  
DISPOSAL, NUTRITION, BIOCHEMICAL OXYGEN DEMAND,  
PERCOLATION, SECONDARY SEWAGE TREATMENT, \*SEWAGE  
DISPOSAL, SEWAGE TREATMENT, SOIL MICROBIOLOGY, \*SOIL  
CHEMISTRY, SURFACE WATER RUNOFF, DENITRIFICATION (U)

THE REPORT PRESENTS A COMPREHENSIVE TECHNICAL  
ASSESSMENT OF THE EFFECTS AND EFFECTIVENESS OF THE  
METHODS USED FOR DISPOSAL OF WASTEWATERS ON THE LAND.  
THREE BASIC APPLICATION TECHNIQUES ARE CONSIDERED:  
SPRAY IRRIGATION, OVERLAND RUNOFF, AND RAPID  
INFILTRATION. THE RELATED ECOSYSTEM RESPONSES TO  
EACH ARE DISCUSSED. THE REPORT CONCLUDES THAT THE  
PRODUCT WATER FROM SUCH OPERATIONS CAN AND SHOULD  
APPROACH DRINKING WATER-IRRIGATION WATER STANDARDS IN  
QUALITY. OF THE THREE MODES, SPRAY IRRIGATION  
OFFERS THE HIGHEST DEGREE OF RELIABILITY AND  
POTENTIAL LONGEVITY. FURTHER DEFINITION IS REQUIRED  
FOR SYSTEM CAPACITY FOR THE OTHER TWO MODES. THE  
REPORT NOT ONLY PROVIDES AN ASSESSMENT OF THE CURRENT  
STATE OF THE ART BUT DOCUMENTS THE NEED FOR WORK  
LEADING TO OPTIMUM CRITERIA FOR DESIGN, CONSTRUCTION  
AND OPERATION OF COST-EFFECTIVE AND ENVIRONMENTALLY  
COMPATIBLE SYSTEMS. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 752 761 13/2  
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

DISPOSAL OF MARINE SEWAGE; AN  
ENVIRONMENTAL MANAGEMENT STANDARD FOR NAVAL  
SHIPS.

(U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT SEP 71-JUN  
72,

JUN 72 22P FARRELL, CHARLES A. , JR;  
REPT. NO. NUC-TP-323

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*SHIPS), (\*NAVAL  
SHORE FACILITIES, SANITARY ENGINEERING), HARBORS,  
STORAGE, STANDARDS, COSTS, WASTES(SANITARY ENGINEERING),  
BACTERIA

(U)

IDENTIFIERS: \*WATER POLLUTION STANDARDS, WATER,  
BIOCHEMICAL OXYGEN DEMAND, COLIFORM BACTERIA,  
REGULATIONS, \*SEWAGE TREATMENT, \*SHIPBOARD SEWAGE  
TREATMENT SYSTEMS, GOVERNMENT POLICIES, COST  
COMPARISON

(U)

THE REPORT PROVIDES BACKGROUND INFORMATION ON THE  
PROBLEM OF WASTE DISPOSAL FOR SHIPS, REVIEWS THE  
ENVIRONMENTAL PROTECTION AGENCY'S PROPOSED  
SECONDARY TREATMENT STANDARD FOR MARINE SANITARY  
DEVICES, AND RECOMMENDS AN ALTERNATE STANDARD FOR  
U.S. NAVY SHIPS. THE ALTERNATE STANDARD IS  
BASED ON ENVIRONMENTAL MANAGEMENT CONSIDERATIONS; IT  
WOULD PERMIT NAVY SHIPS TO DISCHARGE RAW SEWAGE  
OVERBOARD WHILE IN TRANSIT BUT WOULD REQUIRE ALL  
SEWAGE, HUMAN AND DOMESTIC, TO BE PUMPED ASHORE WHILE  
SHIPS ARE MOORED AT NAVAL STATIONS. UNDER THE  
ALTERNATE STANDARD THE CONTRIBUTION OF NAVY SHIPS  
TO BIOLOGICAL OXYGEN DEMAND AND SUSPENDED SOLIDS IN  
UNITED STATES HARBORS WOULD BE REDUCED BY  
APPROXIMATELY 95 PERCENT, WHEREAS THE EPA STANDARD  
WILL ACHIEVE A REDUCTION OF LESS THAN 70 PERCENT.  
IN ADDITION THE ALTERNATE STANDARD WOULD REDUCE BY  
AN ESTIMATED 68 PERCENT OR 19.7 MILLION DOLLARS  
ANNUALLY THE PLANNED COST TO THE NAVY OF MEETING  
THE EPA STANDARD BY INSTALLING A SEWAGE HOLDING  
SYSTEM ON NAVAL SHIPS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 753 926 13/2  
ENVIRONMENTAL CONSULTANTS INC CLARKSVILLE IND

AUTOMATION OF WASTEWATER TREATMENT  
SYSTEMS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
DEC 72 258P PAVONI, JOSEPH L. ; SPINNEY,  
PETER R. ;  
CONTRACT: DACA23-71-C-0016  
PROJ: DA-4-A-062112-A-891  
TASK: 4-A-062112-A-89104  
MONITOR: CERL TR-E-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, AUTOMATION),  
SEWAGE, FLUID FLOW, ODORS, CHEMICAL PRECIPITATION,  
CHLORINATION, MONITORS  
IDENTIFIERS: ODOR CONTROL, ACTIVATED SLUDGE PROCESS,  
AUTOMATIC, CONTROL, \*SEWAGE TREATMENT, SLUDGE  
DISPOSAL, CONTROL, FLUID FLOW, \*INDUSTRIAL WASTE  
TREATMENT, DISINFECTION

(U)

(U)

THE OBJECTIVE OF THE INVESTIGATION WAS TO REVIEW  
AND EVALUATE THE PRESENT STATE-OF-THE ART TECHNOLOGY  
FOR AUTOMATING NEW OR EXPANDED WASTEWATER TREATMENT  
FACILITIES, AND FOR UPGRADING THE PERFORMANCE OF  
EXISTING TREATMENT PLANTS. THE STUDY MAY PERMIT  
THE MORE EFFICIENT AND EFFICIENT AND ECONOMIC  
OPERATION OF TREATMENT FACILITIES SUBJECTED TO  
VARIATIONS IN ORGANIC AND INORGANIC LOADING WHILE  
MAINTAINING EFFLUENT QUALITY IN CONFORMANCE WITH  
INCREASINGLY STRINGENT ANTIPOLLUTION STANDARDS.  
PRESENTED AND EVALUATED ARE AUTOMATIC CONTROL  
SYSTEMS FOR SPECIFIC WASTEWATER UNIT PROCESSES AS  
WELL AS THE INTERFACING OF THESE VARIOUS SYSTEMS TO  
PROVIDE COMPLETE CONTROL OF THE WASTEWATER TREATMENT  
PROCESS.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 754 784 13/2  
STANFORD RESEARCH INST MENLO PARK CALIF

SUPPORT OF ENVIRONMENTAL PROGRAM  
PLANNING.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
OCT 72 391P MACKIN, JAMES L. ; SCHMIDT,  
RICHARD A. ;  
CONTRACT: N00014-72-C-0445, ARPA ORDER-2195  
PROJ: NR-089-091, SRI-1878

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DEPARTMENT OF DEFENSE, \*ENVIRONMENT),  
(\*RESEARCH MANAGEMENT, ENVIRONMENT), SCIENTIFIC  
RESEARCH, NATURAL RESOURCES, AIR POLLUTION, WATER  
POLLUTION, HEAT, ECONOMICS, ELECTRIC POWER PRODUCTION,  
ENERGY, STRATOSPHERE, EXHAUST GASES, PESTICIDES, NOISE,  
SONIC BOOM, WEAPON SYSTEMS, MONITORS (U)  
IDENTIFIERS: WASTE DISPOSAL, NOISE POLLUTION, OILS,  
POLLUTION, REMOVAL, \*POLLUTION, \*RESEARCH MANAGEMENT,  
ROCKET EXHAUST, SOLID WASTE DISPOSAL, HAZARDOUS  
MATERIALS, LAND USE, THERMAL POLLUTION,  
ELECTROMAGNETIC RADIATION HAZARDS, ENVIRONMENTS,  
SURVEYS, ENVIRONMENTAL IMPACT S (U)

PRINCIPAL ENVIRONMENTAL PROBLEM AREAS OF IMPORTANCE  
TO THE DEPARTMENT OF DEFENSE WERE IDENTIFIED AND  
POSSIBLE APPROACHES TO ADVANCED RESEARCH PROJECTS  
DIRECTED TOWARD SOLUTIONS OF THESE PROBLEMS WERE  
SUGGESTED TO PROVIDE PARTIAL SOURCE MATERIAL IN  
SUPPORT OF DEFENSE ADVANCED RESEARCH PROJECTS  
AGENCY'S RESEARCH PROGRAM PLANNING. TOPICS  
REGARDING ENVIRONMENTAL IMPACT ANALYSIS, RESOURCES  
MANAGEMENT, AIR QUALITY, WATER QUALITY, MATERIALS  
HANDLING AND DISPOSAL, DATA MANAGEMENT AND SPECIAL  
PROBLEMS WERE INCLUDED. FOR EACH TOPIC,  
INFORMATION WAS ORGANIZED ACCORDING TO STATEMENT OF  
THE PROBLEM, STATE OF THE ART, PRESENT ACTIVITIES AND  
ORGANIZATION, IMPLICATIONS FOR THE DOD, AND  
RECOMMENDATIONS FOR FURTHER STUDIES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 755 178 13/2  
NORTH CAROLINA AGRICULTURAL EXPERIMENT STATION  
RALEIGH

MARSH BUILDING WITH DREDGE SPOIL IN NORTH  
CAROLINA,

(U)

JUL 72 29P WOODHOUSE, W. W. , JR.;  
SENECA, E. D. ; BROOME, S. W. ;  
REPT. NO. BULL-445  
CONTRACT: DACW72-70-C-0015, NSF-GH-78  
MONITOR: CERC 2-72

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COASTAL REGIONS, EROSION), NORTH  
CAROLINA, PLANTS(BOTANY), SWAMPS (U)  
IDENTIFIERS: WASTE DISPOSAL, \*SWAMPS, BEACH EROSION,  
\*SHORE PROTECTION, \*SPARTINA ALTERNIFLORA, \*SPOIL,  
DREDGING (U)

WORK WAS INITIATED IN THE FALL OF 1969 ALONG THE  
NORTH CAROLINA COAST ON THE STABILIZATION OF  
DREDGE SPOIL WITH SPARTINA ALTERNIFLORA LOISEL.  
STUDIES INCLUDED METHODS OF PROPAGATION AND  
ESTABLISHMENT, GROWTH RATES, FACTORS AFFECTING  
GROWTH, AND SUBSTRATE AND ELEVATIONAL EFFECTS.  
REASONABLY SATISFACTORY METHODS AND PROCEDURES HAVE  
BEEN DEVELOPED AND SOME TENTATIVE GUIDELINES  
FORMULATED FOR THE USE OF THIS PLANT FOR  
STABILIZATION OF DREDGE SPOIL. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 755 540 13/2  
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

SOME TECHNICAL AND ECONOMIC CONCERNS  
RELATING TO SHIPBOARD POLLUTION ABATEMENT, (U)

DEC 72 61P ROWELL, CHARLES F. ;  
REPT. NO. NPS-61RW72121A  
PROJ: NAVSHIPS-PO-5-5403

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHIPS, \*SANITARY ENGINEERING), (\*WATER  
POLLUTION, SHIPS), REVIEWS, OILS, SEWAGE, OCEANS, SEA  
WATER (U)  
IDENTIFIERS: OXIDATION, OCEAN WASTE DISPOSAL, \*OILS,  
\*POLLUTION, \*SHIPBOARD SEWAGE TREATMENT SYSTEMS,  
\*SEWAGE TREATMENT (U)

THREE QUESTIONS RELATED TO ABATEMENT OF POLLUTION  
FROM NAVAL VESSELS ARE EXAMINED. CURRENT  
CANDIDATES FOR SHIPBOARD SEWAGE TREATMENT APPLICATION  
ARE DISCUSSED WITH RESPECT TO LIMITATIONS OF  
DEVELOPMENT IMPOSED BY TECHNICAL PROCESSES UTILIZED.  
LIMITED FLUSH WITH INCINERATION AND BIOLOGICAL  
TREATMENT ARE JUDGED READY FOR APPLICATION WITH THE  
LATTER METHOD LESS DESIRABLE FOR SEVERAL SECONDARY  
REASONS. WET AIR OXIDATION IS ALSO CONSIDERED A  
GOOD CANDIDATE. OPEN OCEAN IMPACT OF OIL AND  
SEWAGE DISCHARGE IS THE SECOND AREA EXAMINED. THE  
THIRD DISCUSSION INVOLVES AN EXAMINATION OF THE  
ECONOMIC FACTORS RELATED TO CONTRACT SEWAGE TREATMENT  
SHOWS THAT IT IS MOST PROBABLE THAT THE NAVY CAN  
WORK WITH MUNICIPAL AUTHORITIES TO THEIR MUTUAL  
ADVANTAGES. REASONABLE AMOUNTS OF SALT WATER DO  
NOT REDUCE EFFICIENCY OF BIOLOGICAL PLANTS OF THE  
AEROBIC VARIETY. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 757 603 13/2 6/6  
ARMY MEDICAL ENVIRONMENTAL ENGINEERING RESEARCH UNIT  
EDGEWOOD ARSENAL MD

PROBLEM DEFINITION STUDY: EVALUATION OF  
HEALTH AND HYGIENE EFFECTS OF THE DISPOSAL OF  
PESTICIDES AND PESTICIDE CONTAINERS, (U)

AUG 72 49P MILLER, THOMAS A. ;  
REPT. NO. USAMEERU-73-01  
PROJ: DA-3-A-062110-A-806

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PESTICIDES, DISPOSAL), (\*ARMY, PEST  
CONTROL), DECONTAMINATION, INSECTICIDES, HERBICIDES,  
SANITARY ENGINEERING, PUBLIC HEALTH, COMBUSTION,  
DECOMPOSITION (U)  
IDENTIFIERS: \*WASTE DISPOSAL, \*LIQUID WASTE DISPOSAL,  
BIODETERIORATION, EARTH FILLS (U)

THE DISPOSAL OF DEPARTMENT OF THE ARMY (DA)  
SURPLUS PESTICIDES OF ALL TYPES PRESENTS SERIOUS  
PROBLEMS. THE REPORT DESCRIBES A STUDY TO  
DETERMINE IF ADEQUATE, ENVIRONMENTALLY-SOUND METHODS  
FOR DISPOSAL EXIST. SIGNIFICANT AMONG THE VARIOUS  
TYPES OF PESTICIDES ARE LARGE QUANTITIES OF  
ORGANOCHLORINE INSECTICIDES AND PHENOXY ACID  
HERBICIDES. THERMAL DEGRADATION OR GROUND  
DEPOSITION ARE THE DISPOSAL METHODS WITH THE GREATEST  
POTENTIAL FOR HANDLING LARGE QUANTITIES OF MATERIAL  
IN THESE CATEGORIES. CHEMICAL TREATMENT HAS  
DISPOSAL FOR DECONTAMINATION OF EMPTY PESTICIDE  
CONTAINERS. RECOMMENDATIONS ARE MADE CONCERNING  
RESEARCH TO DETERMINE THE BEST METHODS OF DISPOSAL.  
(AUTHOR MODIFIED ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 757 662 19/1 13/2  
NAVAL AMMUNITION DEPOT CRANE IND

ISOLATION AND DISPOSAL OF CHEMICAL  
INGREDIENTS UTILIZED IN ILLUMINATING FLARES,

(U)

JAN 73 43P MUSSELMAN, KENNETH A. ;  
REPT. NO. NAD-CR-RDTR-217  
PROJ: ORD-332-002/U6U-1/UF53-554-301  
MONITOR: GIDEP 347.16.00.00-X9-03

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FLARES, DISPOSAL), COMBUSTION, AIR  
POLLUTION, MAGNETSIUM, NITRATES, SOLVENT EXTRACTION,  
RECOVERY

(U)

IDENTIFIERS: \*WASTE DISPOSAL, \*MATERIALS RECOVER,  
JOINT PANEL AMMUNITION DISPOSAL, JPAD(JOINT  
PANEL AMMUNITION DISPOSAL),

(U)

A COMMON METHOD OF DISPOSING OF WASTE MATERIALS  
RESULTING FROM THE PRODUCTION OF ILLUMINATING FLARES  
IS TO BURN THEM IN A BURNING PIT. THIS ADDS  
POLLUTANTS IN THE FORM OF SMOKE AND TOXIC OR NOXIOUS  
FUMES. TO ELIMINATE THIS SOURCE OF POLLUTION, A  
RELATIVELY FACILE SCHEME FOR ISOLATING AND RECLAIMING  
THE MAGNESIUM AND FOR THE DISPOSAL OF THE SODIUM  
NITRATE AND BINDER RESIDUES FROM WASTE FLARE  
COMPOSITIONS HAS BEEN DEVELOPED. THIS SCHEME  
INVOLVES WASHING THE FLARE COMPOSITIONS WITH WATER,  
AND IN SOME INSTANCES WITH ACETONE OR OTHER SOLVENTS,  
TO REMOVE SODIUM NITRATE AND MOST OF THE BINDER  
MATERIAL. THE REMAINING MAGNESIUM IS DRIED AND  
PREPARED FOR SALE AS SCRAP OR FOR USE IN THE  
PRODUCTION OF NEW FLARES. LUMINOUS INTENSITY DATA,  
COLLECTED ON PROTOTYPE FLARES UTILIZING THE RECLAIMED  
MAGNESIUM, SUGGEST THAT REUSE OF THE UNADULTERATED  
MATERIAL IN ILLUMINATING COMPOSITION PRODUCTION MAY  
NOT BE FEASIBLE. SODIUM NITRATE, AQUEOUS SOLUTION,  
IS BEING EVALUATED FOR ITS NUTRIENT VALUE AS A  
FERTILIZER AND THE INTRACTABLE, INFRANGIBLE BINDER IS  
SENT TO LAND-FILL. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 757 988 13/2  
OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)

CIESM AND MARINE POLLUTION. (U)

DESCRIPTIVE NOTE: CONFERENCE REPT.,  
FEB 73 14P LEONARD, JOHN M. ;  
REPT. NO. ONRL-C-5-73

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MEDITERRANEAN SEA, \*WATER POLLUTION),  
(\*SYMPOSIA, WATER POLLUTION), AERIAL PHOTOGRAPHY,  
BACTERIA, WASTES(INDUSTRIAL), WASTES(SANITARY  
ENGINEERING), DISPOSAL, VIRUSES, METALS, TOXICITY (U)  
IDENTIFIERS: WATER POLLUTION DETECTION, OILS,  
POLLUTION, BIPHENYL/CHLORO (U)

A TWO-DAY SESSION ON MARINE POLLUTION PRECEDED  
THE PLENARY CONGRESS OF CIESM, HELD IN ATHENS  
IN NOVEMBER 1972. ABOUT 40 PAPERS DEALING WITH  
VARIOUS ASPECTS OF POLLUTION IN THE MEDITERRANEAN  
WERE GIVEN. IN THIS REPORT THE WRITER LISTS  
PRESENTATIONS, DISCUSSES BRIEFLY THOSE WHICH SEEMED  
PARTICULARLY INTERESTING, AND GIVES A MILDLY  
OPTIMISTIC PROGNOSIS FOR POLLUTION RESEARCH IN THE  
MEDITERRANEAN. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 758 214 13/2  
AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX

A SURVEY OF MATHEMATICAL TECHNIQUES FOR  
SOLID WASTE MANAGEMENT.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. JAN-JUL 72,  
MAR 73 30P LUNDQUIST, DENNIS E. ;  
REPT. NO. AFWL-TR-72-240  
PROJ: AF-683M

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WASTES(SANITARY ENGINEERING), MANAGEMENT  
ENGINEERING), MATHEMATICAL MODELS, DISPOSAL, COLLECTING  
METHODS, OPTIMIZATION, COSTS, AIR FORCE (U)  
IDENTIFIERS: ROUTING, \*SOLID WASTE DISPOSAL (U)

ONE MEANS OF IMPROVING SOLID WASTE COLLECTION  
EFFICIENCY IS THROUGH THE USE OF MATHEMATICAL  
MODELING AND OTHER ANALYTIC TECHNIQUES. THE  
RESEARCH EFFORT BRIEFLY SUMMARIZES SOME OF THE MORE  
SIGNIFICANT EFFORTS IN QUANTIFYING SOLID WASTE  
COLLECTION AND TRANSPORTATION SYSTEMS. THESE  
TECHNIQUES ARE DESCRIBED AND EVALUATED FOR POTENTIAL  
AIR FORCE USE. (AUTHOR MODIFIED  
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 758 402 13/2

NAVAL FACILITIES ENGINEERING COMMAND WASHINGTON D C

REPORT ON INVESTIGATION OF SOLID WASTE  
COMPACTION SYSTEMS AT NAVAL FACILITIES.

(U)

73 199P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*MILITARY  
FACILITIES), (\*WASTES(SANITARY ENGINEERING),  
\*COMPACTING), FEASIBILITY STUDIES, NAVAL SHORE  
FACILITIES, PERFORMANCE(ENGINEERING), EFFECTIVENESS,  
COSTS, KITCHEN EQUIPMENT AND SUPPLIES (U)  
IDENTIFIERS: COMPARISON, SAN DIEGO(CALIFORNIA), \*SOLID  
WASTE DISPOSAL, CRITERIA (U)

THE REPORT PRESENTS THE RESULTS OF ENGINEERING  
STUDIES OF THE FEASIBILITY OF ON-SITE COMPACTION  
SYSTEMS FOR INCREASING THE EFFICIENCY OF STORAGE,  
COLLECTION AND HANDLING OF GENERAL TRASH WASTES FROM  
NAVAL INSTALLATIONS AND FOR DETERMINING CRITERIA  
FOR SELECTION OF COMPACTION SYSTEMS. FIELD  
INVESTIGATIONS WERE MADE OF PRESENT METHODS AND COSTS  
OF STORING, COLLECTING AND HAULING SOLID WASTES AT  
THE GREAT LAKES NAVAL TRAINING CENTER,  
ILLINOIS, AND AT A NUMBER OF NAVAL INSTALLATIONS  
AT SAN DIEGO, CALIFORNIA. A SURVEY WAS MADE  
OF COMMERCIALY AVAILABLE COMPACTION SYSTEMS.  
EVALUATION WAS MADE OF THE APPLICATION AND COST  
EFFECTIVENESS OF COMPACTION SYSTEMS. (AUTHOR  
MODIFIED ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 758 709 6/6 13/2  
NEW MEXICO UNIV ALBUQUERQUE DEPT OF MATHEMATICS AND  
STATISTICS

MAN'S IMPACT ON THE EUTROPHICATION OF A LOTIC  
SYSTEM.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
APR 73 29P HANSMANN, EUGENE ; ZIMMER,  
WILLIAM ;  
REPT. NO. TR-269  
CONTRACT: N00014-69-A-0165-0003  
PROJ: NR-042-304

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, RIVERS), (\*RIVERS,  
\*ECOLOGY), (\*CONNECTICUT, RIVERS), ALGAE,  
WASTES(INDUSTRIAL), WASTES(SANITARY ENGINEERING),  
PERIODIC VARIATIONS

(U)

IDENTIFIERS: \*WATER POLLUTION EFFECTS(PLANTS),  
\*LIMNOLOGY, BIOMASS, PERIPHYTON, DIATOMS,  
EUTROPHICATION

(U)

TWO RIVERS HAVING SIMILAR GEOLOGICAL AND CLIMATIC  
CONDITIONS WERE STUDIED IN RELATION TO MAN'S IMPACT  
ON THE EUTROPHICATION OF THE AQUATIC ENVIRONMENT.  
THE BIOLOGICAL PARAMETER OF BIOMASS ACCUMULATION  
(MGS CHLOROPHYLL A PER SQUARE METER) AND  
OBSERVATIONS OF THE FLORAL COMPOSITION OF THE  
PERIPHYTON COMMUNITY WERE USED. RESULTS INDICATED  
THAT SIGNIFICANT BIOLOGICAL DIFFERENCES WERE PRESENT  
BETWEEN A POLLUTED AND NON-POLLUTED STREAM.

(AUTHOR)

(U)

AD-A041 950

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA  
ENVIRONMENTAL POLLUTION: SANITARY ENGINEERING AND INDUSTRIAL WA--ETC(U)  
JUL 77

F/G 13/2

UNCLASSIFIED

DDC/BIB-77/09

NL

3 OF 5  
AD-A041 950







UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 759 692 18/7  
OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)  
SYMPOSIUM ON THE MANAGEMENT OF RADIO-ACTIVE  
WASTES FROM FUEL REPROCESSING, PARIS, 27  
NOV TO 1 DEC 1972. (U)

DESCRIPTIVE NOTE: CONFERENCE REPT.,  
APR 73 24P MASON, DAVID M. ;  
REPT. NO. ONRL-C-7-73

UNCLASSIFIED REPORT

DESCRIPTORS: (\*RADIOACTIVE WASTES, DISPOSAL), SYMPOSIA,  
REACTOR FUEL PROCESSING (U)

DESCRIBED IS A SYMPOSIUM WHICH COVERED CURRENT AND  
RECOMMENDED FUTURE PRACTICES IN THE STORAGE OF  
RADIOACTIVE WASTES ARISING FROM REPROCESSING OF FUELS  
FROM NUCLEAR POWER-PLANTS. INCLUDED WAS THE  
MAGNITUDE OF LOCAL RELEASE OF RADIONUCLIDES AND THEIR  
GLOBAL IMPACT. TECHNIQUES OF SOLIDIFICATION OF  
HIGH LEVEL WASTES AND SUBSEQUENT STORAGE IN  
APPROPRIATE TERRESTRIAL LOCATIONS WERE DISCUSSED.  
THE MAIN CRITERION FOR ACCEPTABLE REPROCESSING AND  
STORAGE PROCEDURES IS THAT THEY SHOULD NOT CREATE  
LARGER QUANTITIES OF RADIOACTIVITY THAN CURRENTLY  
EXISTS IN THE NATURAL BACKGROUND. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 760 490 13/2 15/5  
ARMY CONSTRUCTION ENGINEERING RESEARCH LAB CHAMPAIGN  
ILL

EVALUATION OF A FIELD-TYPE INCINERATOR FOR  
HUMAN WASTE (THEATER OF OPERATIONS SEWAGE  
TREATMENT SYSTEMS).

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAR 73 66P MATHERLY, J. ;  
REPT. NO. CERL-TR-E-10  
PROJ: DA-4-A-666717-D-895

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TOILET FACILITIES, \*SANITARY  
ENGINEERING), (\*INCINERATORS, SANITARY ENGINEERING),  
ODORS, SMOKE, PARTICLES, BACTERIA, URINE,  
WASTES(SANITARY ENGINEERING), PERFORMANCE(ENGINEERING),  
MILITARY REQUIREMENTS (U)  
IDENTIFIERS: SEWAGE TREATMENT, FECES (U)

THE REPORT PRESENTS RESULTS AND AN EVALUATION OF  
EFFORTS TO MODIFY THE BURN-OUT LATRINE TO IMPROVE ITS  
OPERATIONAL CHARACTERISTICS WHILE MAINTAINING  
SIMPLICITY OF FABRICATIONS. MODIFICATIONS TO THE  
BURN-OUT LATRINE, DEVELOPED BY ILLINOIS INSTITUTE  
OF TECHNOLOGY RESEARCH INSTITUTE, CONSIST  
PRIMARILY OF A METHOD OF METERING FUEL INTO A WASTE  
CONTAINER, AND THE ADDITION OF A BURNER STACK  
ASSEMBLY DESIGNED TO REDUCE SMOKE BY IMPROVING AIR-  
FUEL MIXTURE, DETENTION TIME, AND OTHER PERTINENT  
CONSIDERATIONS. THESE MODIFICATIONS WERE  
FABRICATED, OPERATED, AND TESTED UNDER FIELD  
CONDITIONS. (MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 761 571 13/2  
ARMY WAR COLL CARLISLE BARRACKS PA

WASTE DISPOSAL FOR THE CITY OF PHILADELPHIA  
AND THE US ARMY CORPS OF ENGINEERS.

(U)

DESCRIPTIVE NOTE: INDIVIDUAL RESEARCH REPT.,  
MAY 73 124P WISDOM, DONALD A. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*PENNSYLVANIA),  
REVIEWS, DISPOSAL, DELAWARE, ESTUARIES, TRANSPORTATION,  
COSTS, SITE SELECTION, COAL, SOILS, RECLAMATION,  
ECONOMICS (U)  
IDENTIFIERS: WASTE DISPOSAL,  
\*PHILADELPHIA(PENNSYLVANIA), SLUDGE DISPOSAL (U)

THE PURPOSE OF THE RESEARCH WAS TO DETERMINE THE  
FEASIBILITY OF USING WASTE MATERIAL FROM  
PHILADELPHIA TO RECLAIM THE WASTED LAND OF THE  
ANTHRACITE REGION TO PRODUCTIVE USE. A DETAILED  
LITERATURE SEARCH WAS CONDUCTED, SUPPLEMENTED BY  
FREQUENT FIELD TRIPS AND CONTINUOUS CONTACT WITH  
GOVERNMENTAL AND PRIVATE SOURCES INVOLVED IN RELATED  
ENVIRONMENTAL PROBLEMS. THE STUDY CONTAINS AN  
ANALYSIS AND COMPARISON OF DIGESTED SLUDGE FROM THE  
CITY OF PHILADELPHIA AND DREDGE MATERIAL FROM THE  
DELAWARE ESTUARY WITH DIGESTED SLUDGE FROM  
CHICAGO. TWO MODES OF TRANSPORTATION (RAILROAD  
AND PIPELINE) WERE ANALYZED AND COMPARED ON A COST  
BASIS; 1779 STRIP-MINED LOCATIONS WERE ANALYZED TO  
ASCERTAIN SUITABLE LAND AVAILABLE FOR WASTE  
APPLICATION; AND AN EXISTING AGENCY WAS SELECTED FOR  
IMPLEMENTATION OF THE PROPOSED WASTE DISPOSAL PLAN.  
(MODIFIED AUTHOR ABSTRACT) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 761 980 13/2  
DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA

WATER POLLUTION.

(U)

DESCRIPTIVE NOTE: REPORT BIBLIOGRAPHY JUN 63-DEC 72.  
JUN 73 298P  
REPT. NO. DDC-TAS-73-26

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, \*BIBLIOGRAPHIES),  
WASTES(INDUSTRIAL), OILS, ABSORPTION(PHYSICAL), AIR  
POLLUTION, BACTERIA, ECOLOGY, HARBORS, HYDROCARBONS,  
MARINE BIOLOGY, METALS, OCEANS, SANITARY ENGINEERING,  
SHIPS, TOXICITY, CHEMICAL ANALYSIS, PUBLIC HEALTH, WATER  
SUPPLIES, CONTAMINATION, WATER, RIVERS, LAKES, SEWAGE,  
WASTES(SANITARY ENGINEERING), DECONTAMINATION,  
PURIFICATION (U)

IDENTIFIERS: OILS, POLLUTION, OIL SPILLS, REMOTE  
SENSING, SEWAGE TREATMENT (U)

THE BIBLIOGRAPHY COMPRISES CITATIONS OF  
UNCLASSIFIED AND UNLIMITED REPORTS COVERING WATER  
POLLUTION, FROM BOTH NATURAL AND MAN-MADE SOURCES.  
REFERENCES PRIMARILY DEAL WITH CAUSES OF POLLUTION,  
THEIR DETECTION CONTROL, TREATMENT AND ELIMINATION.  
COMPUTER-GENERATED INDEXES ARE CORPORATE  
AUTHOR-MONITORING AGENCY, SUBJECT, TITLE,  
AND PERSONAL AUTHOR. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 763 095 13/2  
NEW MEXICO UNIV ALBUQUERQUE ERIC H WANG CIVIL ENGINEERING  
RESEARCH FACILITY

DISPOSAL OF AIRCRAFT WASHRACK WASTE  
WATER.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. JUL 71-JUL 72,  
JUN 73 45P REINERT, BRUCE D. ;  
CONTRACT: F29601-72-C-0024  
PROJ: AF-683M  
MONITOR: AFWL TR-73-33

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, MILITARY  
FACILITIES), (\*AIRCRAFT, CLEANING), OILS,  
CONCENTRATION(CHEMISTRY), WASTES(INDUSTRIAL),  
PERFORMANCE(ENGINEERING), WATER FILTERS, CENTRIFUGE  
SEPARATION, COLLOIDS, COAGULATION (U)  
IDENTIFIERS: ACTIVATED SLUDGE PROCESS, INDUSTRIAL  
WASTE TREATMENT (U)

THE STUDY WAS CONDUCTED TO EVALUATE THREE DIFFERENT  
METHODS OF TREATING AIRCRAFT WASHRACK WASTE WATER,  
VIZ., DILUTION IN AN ACTIVATED SLUDGE TREATMENT  
PLANT, FILTRATION THROUGH A SYNTHETIC MEDIA FILTER,  
AND CENTRIFUGATION USING BOTH CONTINUOUS-FLOW AND  
BATCH CENTRIFUGES. ACTIVATED SLUDGE TREATMENT OF  
WASHRACK WASTE WATER FROM DAVIS-MONTHAN AFB WAS  
SUITABLE AT A 8-PERCENT-BY-VOLUME DILUTION WITH  
DOMESTIC SEWAGE. THE CHEMICAL OXYGEN DEMAND  
(COD) AND EMULSIFIED OIL CONCENTRATIONS AT THIS  
DILUTION WERE 1000 AND 200 MG/L, RESPECTIVELY.  
COAGULATION OF WASHRACK WASTE WATER WITH ALUM,  
FOLLOWED BY FILTRATION, WAS NOT ECONOMICAL BECAUSE OF  
THE EXCESSIVE CHEMICAL ADDITIONS REQUIRED.  
CENTRIFUGATION OF WASHRACK WASTE WATER WAS NOT  
FEASIBLE BECAUSE EMULSIFIED OIL REMOVAL WAS  
NEGLECTIBLE EVEN AT RELATIVE CENTRIFUGAL FORCES  
(RCF) AS HIGH AS 20,000. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 763 454 13/2 13/10  
JOHNSON (BERNARD) INC HOUSTON TEX

SHIP WASTE OFFLOAD SYSTEM STUDY. PHASE 1  
REPORT. PRELIMINARY CONCEPT DEVELOPMENT AND  
ECONOMIC COMPARISONS, (U)

MAY 73 146P DAVIS, EDWARD J. ; SYLVA,  
CESAK :  
CONTRACT: N00025-72-C-0042

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHIPS, \*SANITARY ENGINEERING),  
(\*WASTES(INDUSTRIAL), DISPOSAL), (\*WASTES(SANITARY  
ENGINEERING), DISPOSAL), OILS, NAVAL SHORE FACILITIES,  
SEWAGE, PIPES, BARGES, CONTAINERS, COSTS,  
PERFORMANCE(ENGINEERING), WATER POLLUTION, COST  
EFFECTIVENESS (U)  
IDENTIFIERS: CONTROL, WATER POLLUTION, LIQUID WASTE  
DISPOSAL, MATERIALS HANDLING, \*SOLID WASTE DISPOSAL,  
HARBORS (U)

THE PURPOSE OF THE STUDY IS TO DEVELOP THE MOST  
COST EFFECTIVE SYSTEM OF OFFLOADING SANITARY, HOTEL,  
OILY, INDUSTRIAL AND SOLID WASTES FROM SHIPS TO SHORE  
FACILITIES. THE STUDIES PRESENTED HEREIN REPRESENT  
PHASE 1 OF THE STUDY WHICH ADDRESSED ITSELF TO  
DEFINING THE PROBLEM, CONCEIVING ALTERNATIVE  
SOLUTIONS, PERFORMING COMPARATIVE ANALYSIS OF THE  
ALTERNATIVES AND SELECTING A SYSTEM FOR FURTHER  
DEVELOPMENT. THE PROBLEM WAS DEFINED IN TERMS OF  
SHIPS PRESENCE, SHIPS WASTE GENERATION RATES,  
EXISTING SHORE FACILITIES AND FIELD CONDITIONS OF  
PERFORMANCE BASED ON DATA COLLECTED IN THE FIELD FROM  
THE NEWPORT, NORFOLK, PEARL HARBOR AND SAN  
DIEGO NAVAL COMPLEXES. FIFTEEN DIFFERENT  
CONCEPTS WERE DEVELOPED FOR CONSIDERATION AS THE  
SHIPS' WASTE OFFLOAD SYSTEM AND WERE PRESENTED IN THE  
FORM OF SKETCHES AND VERBAL DESCRIPTIONS. THE  
CONCEPTS WERE COMPARED IN TERMS OF TECHNICAL,  
OPERATING AND ECONOMICAL CONSIDERATIONS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 763 920 6/6 8/1 13/2  
SKIDAWAY INST OF OCEANOGRAPHY SAVANNAH GA

RESEARCH TO DETERMINE THE ENVIRONMENTAL  
RESPONSE TO THE DEPOSITION OF SPOIL ON SALT  
MARSHES USING DIKED AND UNDIKED TECHNIQUES. (U)

DESCRIPTIVE NOTE: ANNUAL PROGRESS REPT. NO. 2.

MAR 73 196P

CONTRACT: DACW21-71-C-0020

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO ANNUAL PROGRESS REPT. NO.  
1, AD-757 717.

DESCRIPTORS: (\*SWAMPS, ECOLOGY), (\*SOILS, DISPOSAL),  
ESTUARIES, WATER POLLUTION, METALS, AMMONIA, AQUATIC  
ANIMALS, SALINITY, CONCENTRATION(CHEMISTRY),  
TEMPERATURE, GRASSES, PLANKTON, PH FACTOR,  
REGENERATION (U)

IDENTIFIERS: WATER, \*WATER POLLUTION EFFECTS(ANIMALS),  
\*WATER POLLUTION EFFECTS(PLANTS), BENTHOS, PELAGIC  
ZONE, PERIPHYTON, \*SALT MARSHES, SEDIMENTS, \*SOLID  
WASTE DISPOSAL, SPARTINA ALTERNIFLORA, \*SPOIL, DIKES,  
\*DREDGING, EARTH FILLS (U)

THE SECOND YEAR'S STUDIES INCLUDED: WATER  
QUALITY CHANGES IN RELATIVELY POLLUTED AREAS DURING  
DREDGING; THE EFFECTS ON WATER QUALITY OF DREDGE  
SPOIL IMPOUNDMENT; PROCESSES RESPONSIBLE FOR WATER  
QUALITY CHANGES DURING DREDGING AND AFTER DREDGE  
SPOIL DISPOSAL; SIGNIFICANT SEDIMENT PARAMETERS WHICH  
CAN BE MEASURED THAT WOULD GIVE SOME BASIS FOR  
PREDICTING WATER QUALITY CHANGES DURING DREDGING;  
DREDGING EFFECTS ON FISH AND MACROINVERTEBRATES; AND  
EFFECTS OF DREDGING ON BENTHIC INFAUNAL POPULATIONS. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 764 534 19/1 13/2  
NATIONAL MATERIALS ADVISORY BOARD (NAS-NAE) WASHINGTON D  
C

TREATMENT AND DISPOSAL OF HIGH-ENERGY  
MATERIALS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

JUN 73 106P

REPT. NO. NMAB-305

CONTRACT: N00017-72-C-4427

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXPLOSIVES, DISPOSAL), (\*PROPELLANTS,  
DISPOSAL), (\*WATER POLLUTION, EXPLOSIVES),  
DECOMPOSITION, RECOVERY, WASTES(INDUSTRIAL), ROCKET  
PROPELLANTS, AMMUNITION PROPELLANTS, BINDERS, REVIEWS,  
PYROTECHNICS (U)

IDENTIFIERS: \*CONTROL, \*WATER POLLUTION, MATERIALS  
RECOVERY, OCEAN WASTE DISPOSAL, \*SOLID WASTE DISPOSAL,  
\*HAZARDOUS MATERIALS, \*INDUSTRIAL WASTE TREATMENT,  
UNDERGROUND STORAGE, EARTH FILLS, ENVIRONMENTS,  
SURVEYS (U)

THE REPORT IS INTENDED TO PROVIDE AN OVERVIEW OF  
NAVAL MUNITIONS TREATMENT AND DISPOSAL, AND A  
DELINEATION OF SOME SUGGESTED GENERAL AND SPECIFIC  
AVENUES OF RESEARCH AND DEVELOPMENT THAT WILL ENHANCE  
FUTURE PROGRESS IN THE AREA. ENVIRONMENTAL  
PROTECTION AND SAFETY TO PERSONNEL, AS WELL AS THE  
ENGINEERING INVOLVED IN THE TREATMENT AND DISPOSAL OF  
HIGH-ENERGY MATERIALS OF ALL THE SERVICES (ARMY,  
NAVY AND AIR FORCE), ARE OF PRIMARY CONCERN.  
IN THE PAST, MUCH OF THE WORK IN THIS FIELD HAS  
BEEN MOTIVATED LARGELY BY EXPEDIENT TECHNOLOGICAL  
CONSIDERATIONS. THEREFORE, THE PRINCIPAL ASPECTS  
OF ENVIRONMENTAL IMPACT PROBLEMS UNDERLYING THE MORE  
IMPORTANT TREATMENT AND DISPOSAL PROBLEMS ARE  
DISCUSSED, AND THE TECHNOLOGY OF POTENTIAL PROCESSES  
FOR SOLVING THESE PROBLEMS IS REVIEWED.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 765 483 13/2  
ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT CENTER  
FORT BELVOIR VA

TREATMENT OF WASTEWATERS FROM MILITARY FIELD  
LAUNDRY, SHOWER, AND KITCHEN UNITS. (U)

DESCRIPTIVE NOTE: FINAL REPT. 24 JUL-18 AUG 72,  
MAY 73 56P LENT, DANIEL S. ROSS,  
ROBERT G. ;

REPT. NO. USAMERDC-2061  
PROJ: DA-1-G-662708-DJ-39  
TASK: 1-G-662708-DJ-3910

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, MILITARY  
FACILITIES), LAUNDRY OPERATIONS, KITCHENS, TOILET  
FACILITIES, WASTES(SANITARY ENGINEERING), CARBON,  
COAGULATION (U)  
IDENTIFIERS: CLARIFICATION, POLYELECTROLYTES, SEWAGE  
TREATMENT, DEWATERING (U)

A FIELD STUDY WAS CONDUCTED TO EVALUATE A  
WASTEWATER TREATMENT PROCESS UTILIZING POWDERED  
ACTIVATED CARBON, A CATIONIC POLYELECTROLYTE AND A  
MODIFIED STANDARD ARMY WATER PURIFICATION UNIT.  
WASTEWATERS USED AS FEEDWATERS WERE EFFLUENTS FROM  
FIELD MILITARY SHOWER, LAUNDRY, AND KITCHEN UNITS AND  
A COMMERCIAL LAUNDROMAT. (MODIFIED AUTHOR  
ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 765 701 13/2  
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

DISPOSAL OF EXCESS AND WASTE EXPLOSIVES IN  
CONFINED CHAMBERS.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
JUN 73 60P VISTED, FRANK ALEXANDER ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXPLOSIVES, \*DISPOSAL), (\*WASTE GASES,  
CONCENTRATION(CHEMISTRY)), UNDERGROUND EXPLOSIONS, MODEL  
TESTS, AIR POLLUTION, DEFLAGRATION, DETONATIONS,  
WASTES(INDUSTRIAL) (U)  
IDENTIFIERS: \*SOLID WASTE DISPOSAL (U)

A NEW CONCEPT IN EXCESS AND WASTE MILITARY  
EXPLOSIVE MATERIAL DISPOSAL ENVISIONS THAT  
CONVENTIONAL MILITARY ORDNANCE MATERIAL BE DISPOSED  
OF IN LARGE BATCH CONFIGURATIONS BY DETONATION/  
DEFLAGRATION IN CONFINED UNDERGROUND CHAMBERS. THE  
GASEOUS PRODUCTS OF THE DISPOSAL EVENT COULD BE  
VENTED, IF DESIRED, TO APPROPRIATE RECOVERY OR  
ENVIRONMENTAL CONTROL EQUIPMENT, OR LEFT TO VENT  
NATURALLY THROUGH THE SURROUNDING EARTH FILTER. THE  
PURPOSE OF THIS WORK IS TO DETERMINE THE PERCENTAGE  
CONCENTRATION OF THE MAJOR GASEOUS PRODUCTS THAT ARE  
PRODUCED BY THE DISPOSAL OF CONVENTIONAL MILITARY  
EXPLOSIVES IN A LABORATORY-SCALE CONFINED CHAMBER AND  
RELATED THESE RESULTS TO FULL SCALE IMPLEMENTATION OF  
THIS NEW CONCEPT IN CONVENTIONAL EXPLOSIVE  
DISPOSAL. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 765 965 13/2 6/20  
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

STUDY OF THE PHYTOTOXICITY OF CERTAIN  
COMPONENTS OF INDUSTRIAL AIR POLLUTION, (U)

JUL 73 12P DOBROVOLSKYI, I. A. ; STRIKHA,  
E. A. ;  
REPT. NO. FSTC-HT-23-2264-72  
PROJ: FSTC-T7023012301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF UKRAYINSKYI BOTANICHNYI  
ZHURNAL (USSR) V27 N5 P640-644 1970, BY STRAKNA.

DESCRIPTORS: (\*AIR POLLUTION, \*PLANTS(BOTANY)),  
STRESS(PHYSIOLOGY), TOXICITY, WASTES(INDUSTRIAL), WASTE  
GASES, SULFUR COMPOUNDS, USSR (U)  
IDENTIFIERS: AIR POLLUTION EFFECTS(PLANTS),  
GROWTH(GENERAL), PLANTS(BOTANY), HYDROGEN SULFIDE,  
TRANSLATIONS (U)

THE AUTHORS OF THIS RUSSIAN TRANSLATION DESCRIBE  
THEIR EXPERIMENTS ON THE PHYTOTOXIC EFFECTS OF  
INDUSTRIAL AIR POLLUTANTS ON RADISHES.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 766 561 15/3  
JACOBS ASSOCIATES SAN FRANCISCO CALIF

DEBRIS CLEARING TIMES AFFECTING CRITICAL  
SURVIVAL ACTIONS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 73 152P WILLIAMSON, THOMAS N. ;  
WICKHAM, GEORGE E. ; TIEDEMANN, HENRY R. ;  
REPT. NO. JA-TR-120-FR  
CONTRACT: DAHC20-72-C-0401  
PROJ: DCPA-3325G

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CIVIL DEFENSE, \*SANITARY ENGINEERING),  
(\*NUCLEAR WARFARE, CIVIL DEFENSE), (\*ROADS, CLEANING),  
URBAN AREAS, RESCUES, DEBRIS, EFFECTIVENESS, MANAGEMENT  
ENGINEERING (U)  
IDENTIFIERS: OVERPRESSURE, POST ATTACK RECOVERY (U)

CLEARING OF EMERGENCY RESCUE ROUTES THROUGH STREET  
DEBRIS WOULD BE A MOST URGENT OPERATION FOLLOWING A  
NUCLEAR ATTACK OR OTHER MASSIVE DEBRIS CAUSING EVENT.  
PATHS AT LEAST WIDE ENOUGH TO PASS AMBULANCES,  
RESCUE VEHICLES AND FIRE TRUCKS WILL BE REQUIRED  
WHERE THERE MAY BE SURVIVORS OR FACILITIES WHICH MUST  
BE PROTECTED FOR SURVIVORS. THIS STUDY ANALYZES THE  
DEBRIS POTENTIAL IN 24 RESIDENTIAL SITUATIONS RANGING  
FROM SINGLE FAMILY UNITS TO MULTI-STORY APARTMENTS,  
ALL SUBJECT TO 2,4,6 AND 10 PSI OVERPRESSURES. THE  
EFFECTIVENESS OF THE APPLICATION OF THE RESOURCES  
WHICH WOULD MORE THAN LIKELY BE AVAILABLE IN THE  
FIRST THREE HOURS IS EVALUATED. AT 4 PSI, AND LESS,  
ROUTES CAN BE CLEARED FOR RESCUE IN JUST ABOUT ANY  
PART OF A CITY. QUITE A FEW ROUTES CAN BE CLEARED  
AT 6 PSI EXCEPT IN VERY DENSELY BUILT UP AREAS AND AT  
10 PSI OR MORE ROUTES IN THREE HOURS WILL BE POSSIBLE  
ONLY IN AREAS WITH VERY LOW BUILDING DENSITY.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 766 718 13/2  
EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

PROCEEDINGS OF MEETING ON ENVIRONMENTAL  
POLLUTION (3RD) HELD AT FORT MCNAIR ON  
17-18 MAY 1972, SPONSORED BY AMERICAN  
ORDNANCE ASSOCIATION. (U)

DESCRIPTIVE NOTE: SPECIAL PUBLICATION,  
AUG 73 215P DRASSER, CHARLES G. ;  
REPT. NO. EA-SP-1300-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED AUG 71, AD-  
729 929.

DESCRIPTORS: (\*AIR POLLUTION, SYMPOSIA), (\*WATER  
POLLUTION, SYMPOSIA), OCEANS, ELECTRIC POWER PRODUCTION,  
SEWAGE, WASTES(INDUSTRIAL), LAW, ENVIRONMENTS, SURVEYS,  
SITE SELECTION (U)

IDENTIFIERS: OILS, POLLUTION, ENVIRONMENTS,  
SURVEYS (U)

THE REPORT CONTAINS THE PAPERS PRESENTED AT FORT  
MCNAIR ON 17 AND 18 MAY 1972 AT THE THIRD  
MEETING ON ENVIRONMENTAL POLLUTION SPONSORED BY  
THE AMERICAN ORDNANCE ASSOCIATION. THE  
TECHNICAL SESSIONS WERE ORGANIZED ALONG THE LINES OF  
THE SOURCES OF POLLUTION AS WELL AS THE SPECIFIC  
NATURE OF THE ENVIRONMENTS IN WHICH THE POLLUTION  
OCCURS. THE SESSIONS DEALT WITH POLLUTION IN THE  
MARINE ENVIRONMENT, POLLUTION FROM DOMESTIC AND  
INDUSTRIAL WASTES, AND POLLUTION FROM POWER  
GENERATION. THE PAPERS WERE PRESENTED BY THE  
DEPARTMENT OF DEFENSE, THE ENVIRONMENTAL  
PROTECTION AGENCY, THE US MARITIME  
ADMINISTRATION, THE US COAST GUARD, AND  
INDUSTRY. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 766 746 13/2  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX  
WATER POLLUTION SURVEY VANDENBERG AFB,  
CA.

(U)

DESCRIPTIVE NOTE: PRELIMINARY REPT. (SUPPLEMENT 1) 11-  
21 NOV 72,  
AUG 73 93P WILLIAMS, CARLTON R. ;  
CLEGERN, ROBERT W. ;  
REPT. NO. EHLIK)-73-14  
PROJ: EHL-72-41

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, MILITARY FACILITIES),  
SANITARY ENGINEERING, PACIFIC OCEAN, CALIFORNIA,  
SOURCES (U)  
IDENTIFIERS: MILITARY AIR FACILITIES, INVENTORIES (U)

DURING 11-21 NOVEMBER 1972 A WASTEWATER TREATMENT  
EVALUATION AND BIOLOGICAL FIELD STUDY WAS PERFORMED  
AT VANDENBERG AFB, CA BY THE USAF  
ENVIRONMENTAL HEALTH LABORATORY, KELLY AFB,  
TX. THE PURPOSE OF THIS FIELD SURVEY WAS TO  
OBTAIN DATA AND PREPARE A REPORT AS OUTLINED IN THE  
CALIFORNIA WATER QUALITY CONTROL PLAN.  
THE WASTEWATER TREATMENT PLANT WAS FOUND TO PROVIDE  
GOOD TREATMENT ON AN AVERAGE DAILY FLOW OF 1.3 MGD  
OF MODERATE STRENGTH DOMESTIC SEWAGE CONTAINING A  
SMALL AMOUNT OF INDUSTRIAL WASTE. A SOURCE CONTROL  
PROGRAM IS OUTLINED WITH EMPHASIS ON INDUSTRIAL WASTE  
SOURCES. THE OPERATION AND PERFORMANCE OF THE  
WASTEWATER TREATMENT PLANT ARE ANALYZED AND PRESENTED  
IN THE FORMAT OF THE GUIDELINES OF THE CALIFORNIA  
WATER QUALITY CONTROL PLAN. THE OCEAN  
RECEIVING WATERS WERE STUDIED IN AN ABRIDGED FASHION  
AFTER THE CALIFORNIA PLAN DUE TO THE LIMITED  
TOXICITY FOUND IN THE EFFLUENT OF THE WASTEWATER  
TREATMENT PLANT AND BECAUSE OF THE HAZARDOUS NATURE  
OF THE OUTFALL LOCATION IN THE SURF ZONE. AN  
OUTLINE OF A MONITORING PROGRAM DESIGNED TO FULFILL  
THE OBJECTIVES OF THE CALIFORNIA PLAN IS ATTACHED  
AS AN APPENDIX TO THIS REPORT. (MODIFIED AUTHOR  
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 766 895 13/2  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX

SURVEY OF WASTEWATER TREATMENT FACILITIES AND  
RECEIVING WATERS AND PROPOSED PERFORMANCE  
SPECIFICATIONS - MCGUIRE AFB AND FT. DIX,  
NEW JERSEY. VOLUME 1. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JUL 73 67P TREMBLAY, JAMES W. ; LAMB,  
NEIL J. ;  
REPT. NO. EHL(K)-73-12-VOL-1  
PROJ: EHL-72-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-766 896.

DESCRIPTORS: (\*MILITARY FACILITIES, \*SANITARY  
ENGINEERING), WATER POLLUTION, NEW JERSEY (U)  
IDENTIFIERS: MCGUIRE AIR FORCE BASE, \*SEWAGE  
TREATMENT (U)

THE REPORT CONTAINS DATA AND DISCUSSION OF THE  
RESULTS OF A FIELD WASTEWATER SURVEY CONDUCTED BY THE  
USAF ENVIRONMENTAL HEALTH LABORATORY, KELLY  
AFB, TEXAS AT MCGUIRE AFB AND FT. DIX,  
NEW JERSEY IN SEPTEMBER 1972. EXTENSIVE  
PHYSICAL, CHEMICAL AND BIOLOGICAL SAMPLING AND  
ANALYSES OF THESE FACILITY'S SEWAGE TREATMENT PLANTS  
AND THE SURFACE WATERS TO WHICH THE PLANTS DISCHARGE  
WERE ACCOMPLISHED. THE QUALITY OF THE RECEIVING  
WATERS WAS FOUND TO BE DEGRADED AS A RESULT OF THE  
SEWAGE PLANT DISCHARGES. THIS REPORT RECOMMENDS  
THAT THESE TWO FEDERAL FACILITIES JOIN IN EFFORTS TO  
CREATE A REGIONAL WASTEWATER MANAGEMENT SYSTEM, AND  
DURING THE INTERIM PERIOD UNTIL SUCH A SYSTEM  
MATERIALIZES, MAINTAIN THE EXISTING SECONDARY SEWAGE  
TREATMENT FACILITIES WITH MINIMUM EXPENDITURE OF  
CAPITAL INVESTMENT FUNDS. PERFORMANCE  
SPECIFICATIONS ARE PROPOSED FOR THE INTERIM PERIOD.  
ALTERNATIVE COURSES OF ACTION ARE EVALUATED IN THE  
EVENT THE REGIONAL MANAGEMENT SYSTEM DOES NOT  
MATERIALIZES. (MODIFIED AUTHOR ABSTRACT) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 766 896 13/2  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX

SURVEY OF WASTEWATER TREATMENT FACILITIES AND  
RECEIVING WATERS AND PROPOSED PERFORMANCE  
SPECIFICATIONS - MCGUIRE AFB AND FT. DIX,  
NEW JERSEY. VOLUME II. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JUL 73 311P TREMBLAY, JAMES W. ; LAMB,  
NEIL J. ;  
REPT. NO. EHL(K)-73-12-VOL-2  
PROJ: EHL-72-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-766 895.

DESCRIPTORS: (\*MILITARY FACILITIES, SANITARY  
ENGINEERING), WATER POLLUTION, NEW JERSEY (U)  
IDENTIFIERS: \*SEWAGE TREATMENT (U)

THE REPORT CONTAINS THE APPENDIX TO THE MAIN REPORT  
CONCERNING A FIELD WASTEWATER SURVEY CONDUCTED BY THE  
USAF ENVIRONMENTAL HEALTH LABORATORY, KELLY  
AFB, TEXAS AT MCGUIRE AFB AND FT. DIX,  
NEW JERSEY IN SEPTEMBER 1972. (MODIFIED  
AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 767 228 13/2  
SCS ENGINEERS LONG BEACH CALIF

AIR FORCE BASE SOLID WASTE MANAGEMENT  
STUDY.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.

AUG 73 362P

CONTRACT: F29601-72-C-0151

PROJ: AF-683M

MONITOR: AFWL TR-73-4

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SANITARY ENGINEERING, \*MILITARY  
FACILITIES), COSTS, RECLAMATION

(U)

IDENTIFIERS: MATERIALS RECOVERY, SANITARY LANDFILLS,  
\*SOLID WASTE DISPOSAL

(U)

THE REPORT DESCRIBES THE EVALUATION PROCEDURES USED  
AND FINDINGS OF A COMPREHENSIVE INVESTIGATION OF  
SOLID WASTE MANAGEMENT PRACTICES AT OFFUTT AIR  
FORCE BASE. INCLUDED IN THE STUDY WAS A ONE-  
MONTH SURVEY CONDUCTED AT OFFUTT AIR FORCE  
BASE TO DETERMINE: DESCRIPTIVE INFORMATION ON  
CURRENT WASTE MANAGEMENT METHODS. QUANTIFICATION  
OF SOLID WASTES WITH RESPECT TO WEIGHT, VOLUME, AND  
SOURCE. A CLASSIFICATION OF SOLID WASTE COMPONENTS  
(PAPER, METAL, WOOD, GLASS, ETC.). A  
CHARACTERIZATION OF THE SOLID WASTES WITH RESPECT TO  
COMBUSTIBILITY, MOISTURE CONTENT, AND BTU VALUE.  
OPERATIONAL COSTS OF SOLID WASTE MANAGEMENT AT THE  
BASE. BASED ON FIELD SURVEY FINDINGS AND A THOROUGH  
REVIEW OF ALTERNATIVE AVAILABLE METHODS, A  
RECOMMENDED SOLID WASTE MANAGEMENT SYSTEM IS  
PRESENTED (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 767 229 13/2  
NEW MEXICO UNIV ALBUQUERQUE ERIC H WANG CIVIL ENGINEERING  
RESEARCH FACILITY

TREATMENT OF ELECTROPLATING WASTES BY ION  
EXCHANGE.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 20 OCT 71-1 OCT 72,  
AUG 73 41P LEHMANN, RICHARD B. ;  
CONTRACT: F29601-72-C-0024  
PROJ: AF-683M  
MONITOR: AFWL TR-73-124

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WASTES(INDUSTRIAL), ELECTROPLATING),  
(\*SANITARY ENGINEERING, \*ELECTROPLATING), (\*ION  
EXCHANGE, WASTES(INDUSTRIAL)), TESTS,  
PERFORMANCE(ENGINEERING), CYANIDES, REGENERATION, WATER  
POLLUTION, METALS, CADMIUM, COPPER, NICKEL, ZINC (U)  
IDENTIFIERS: CONTROL, WATER POLLUTION, \*INDUSTRIAL  
WASTE TREATMENT, INDUSTRIES, WASTES (U)

THE CHEMISTRY, EFFICIENCY, AND REGENERATION  
CHARACTERISTICS OF STRONG ANION RESINS (DOWEX  
MSA-1, AMBERLITE IRA-938, DUOLITE A-102D)  
AND MIXED BED SYSTEMS (DOWEX MSA-1 AND MSC-1,  
AMBERLITE IRA-938 AND IR-120 PLUS, DUOLITE  
A-102D AND C-20) WERE TESTED IN AN ATTEMPT TO  
FIND A SATISFACTORY ION EXCHANGE SYSTEM FOR THE  
REMOVAL OF CYANIDE AND HEAVY METALS (NI, CU,  
CD, ZN) FROM DILUTE ELECTROPLATING WASTES.  
DETERMINATION OF THE SPECIES WHICH CAUSE FOULING ON  
THESE RESINS WAS ALSO ATTEMPTED. RESULTS SHOW THAT  
THE STRONG ANION RESINS REMOVE BOTH THE CYANIDE AND  
THE METAL AS AN ANIONIC COMPLEX SPECIES. WHILE THE  
REMOVAL PRODUCES ACCEPTABLE EFFLUENT FOR DISPOSAL  
INTO PUBLIC SEWAGE SYSTEMS, THE CAPACITY OF THE RESIN  
DECREASES WITH SUCCESSIVE REGENERATIONS. IN SOME  
RESIN SYSTEMS THIS DECREASE IN CAPACITY WAS AS HIGH  
AS 56 PERCENT. IN ADDITION, THE REGENERATION  
LIQUIDS CONTAIN ANIONIC COMPLEX METAL CYANIDES WHICH  
ARE UNSUITABLE FOR RECYCLING AND REQUIRE FURTHER  
TREATMENT. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 769 293 7/1 13/2  
THIOLKOL CHEMICAL CORP BRIGHAM CITY UTAH

CYANIDE WASTE TREATMENT UTILIZING CATALYTIC  
OXIDATION.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 23 MAY-25 APR 73,  
OCT 73 93P WOOLHISER, P. H. ; CLARK, D.

P. :

CONTRACT: F29601-72-C-0135

PROJ: AF-683M3W10

MONITOR: AFWL TR-73-39

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CYANIDES, \*WASTE TREATMENT),  
PROTOTYPES, ELECTROPLATING,  
WASTES(INDUSTRIAL), PHOTOGRAPHIC PROCESSING,  
CATALYSTS, OXIDATION, COBALT, REVIEWS,  
CYANATES, CHLORINE, COLORIMETRIC ANALYSIS,  
CHEMICAL ANALYSIS, ELECTROLYSIS, PRECIPITATION,  
CHLORINATION, DESIGN, CONTROL, WATER POLLUTION,  
COST ESTIMATES, FABRICATION

(U)

IDENTIFIERS: PERFORMANCE EVALUATION, ION SELECTIVE  
ELECTRODES, WATER POLLUTION CONTROL, INDUSTRIAL  
WASTE TREATMENT

(U)

ELECTROPLATING OPERATIONS AND COLOR PHOTOGRAPH  
PROCESSING ARE TWO MAJOR SOURCES OF LIQUID CYANIDE  
WASTES. TO MEET STATE EFFLUENT STANDARDS, A SYSTEM  
USING A PROPRIETARY COBALT-BASED CATALYST AND  
CHLORINE-PRODUCING ELECTROLYTIC CELLS WAS EVALUATED  
WITH ACTUAL PHOTOGRAPHIC AND ELECTROPLATING WASTE.  
A LITERATURE SEARCH AND LABORATORY EVALUATION WAS  
CONDUCTED TO DETERMINE PROCESSES THAT COULD BE USED  
TO SUPPLEMENT THE CATALYTIC OXIDATION SYSTEM. A  
PROTOTYPE CATALYTIC OXIDATION SYSTEM CAPABLE OF  
TREATING 1/4 GALLON PER MINUTE (GPM) OF 2,000 MG/  
1 TOTAL CYANIDE WASTE PRODUCED EFFLUENT STREAMS  
CONTAINING UNDETECTABLE AMOUNTS OF CYANIDE (UNDER  
0.01 MG/L) WITH COPPER PLATING AND NICKEL STRIP  
FEEDS. TREATMENT OF PHOTOGRAPHIC WASTES PRODUCED AN  
87 TO 94 PERCENT REDUCTION OF TOTAL CYANIDE. THE  
CATALYTIC OXIDATION SYSTEM HAS A STRONG POTENTIAL FOR  
DECREASING THE OPERATION COSTS OF CYANIDE DESTRUCTION  
SYSTEMS. SYSTEM DESIGNS ARE GIVEN FOR TWO FULL-  
SIZE CYANIDE WASTE TREATMENT SYSTEMS. (MODIFIED  
AUTHOR ABSTRACT)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 769 476 13/2  
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

HARBOR POLLUTION FROM LARGE SHIPS. (U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT REPT. NOV 72-  
JAN 73,

OCT 73 23P DONOHUE, G. L. ; HOYT, J.

W. ;

REPT. NO. NUC-TP-368

PROJ: SF53-554

TASK: SF53-554-002, 17225

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, SHIPS),  
(\*SEWAGE, DIFFUSION), (\*HARBORS, WATER  
POLLUTION), TRACER STUDIES, DYES, BACTERIA (U)  
IDENTIFIERS: BIOCHEMICAL OXYGEN DEMAND (U)

A NUMBER OF RELEASES OF DYED SEWAGE WERE MADE AT  
RATES CORRESPONDING TO THOSE AT WHICH SEWAGE WOULD BE  
DISCHARGED BY AMPHIBIOUS TASK FORCES OF FROM 500 TO  
10,000 MEN. THE MOVEMENT OF THE SEWAGE WAS TRACED  
BY PHOTOGRAPHY, BACTERIAL COUNTS, DYE, AND BOD  
MEASUREMENTS IN THE SURROUNDING WATER AND ON THE  
SHORELINE. THE RESULTS SHOW THAT THE DIFFUSION OF  
THE SEWAGE WAS MUCH LOWER THAN THAT PREDICTED FROM  
OPEN-OCEAN DATA, AND HENCE NAVY SHIPS CAN STAY IN A  
SMALL HARBOR MUCH LONGER THAN ORIGINALLY ANTICIPATED  
WITHOUT DANGER OF SEWAGE CONTAMINATION OF THE  
SHORELINE. AN OPERATIONAL-GUIDANCE CHART WAS  
CONSTRUCTED INDICATING THOSE TIMES AND MINIMUM  
DISTANCES FOR A GIVEN MANNING LEVEL OF A TASK FORCE  
THAT WOULD PREVENT CONTAMINATION OF THE SHORE.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 769 489 13/2  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX

WASTEWATER TREATMENT AND DISCHARGE SURVEY,  
OFFUTT AFB NE, OCT 1973,

(U)

OCT 73 163P BULLOCK, CHARLES W. ;  
LEFEBVRE, EDWARD E. ;  
REPT. NO. EHL(K)-73-19  
PROJ: EHL-71-43

UNCLASSIFIED REPORT

DESCRIPTORS: (•AIR FORCE FACILITIES, •SANITARY  
ENGINEERING), SEWAGE TREATMENT, WATER TREATMENT,  
FACILITIES, PHOTOGRAPHIC MATERIALS, WASTE  
DISPOSAL, EFFICIENCY, DISCHARGES,  
WASTES(INDUSTRIAL), MATHEMATICAL ANALYSIS,  
SURVEYING, NEBRASKA

(U)

IDENTIFIERS: OFFUTT AIR FORCE BASE,  
EVALUATION

(U)

DURING 1-12 MAY 1972 A WASTEWATER TREATMENT  
SURVEY WAS PERFORMED AT OFFUTT AFB NE BY THE  
USAF ENVIRONMENTAL HEALTH LABORATORY, KELLY  
AFB TX. THIS SURVEY REPORT DESCRIBES THE QUALITY  
AND QUANTITY OF DOMESTIC AND INDUSTRIAL WASTES  
GENERATED BY THE BASE, EVALUATES THE EFFECTIVENESS OF  
EXISTING TREATMENT, AND RECOMMENDS CONTINUED PLANS  
FOR THE BASE'S PARTICIPATION IN JOINING THE REGIONAL  
TREATMENT PLANT OF OMAHA-COUNCIL BLUFFS  
METROPOLITAN AREA PLANNING AGENCY.

PARTICULAR EMPHASIS IS GIVEN TO QUANTITATING THE  
DOMESTIC SEWAGE CHARACTERISTICS, IMPROVING THE BASE  
SECONDARY SEWAGE TREATMENT PLANT EFFICIENCY, AND  
QUANTITATING THE UNTREATED WASTEWATER DISCHARGES FROM  
A LIME/ALUM WATER SOFTENING PLANT. A WATER  
POLLUTION SAMPLING PROGRAM IS OUTLINED WITH EMPHASIS  
ON INDUSTRIAL WASTE SOURCES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZQM09

AD- 771 044 13/2  
EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

PROCEEDINGS OF ANNUAL SYMPOSIUM ON  
ENVIRONMENTAL POLLUTION (4TH), HELD AT  
EDGEWOOD ARSENAL, ABERDEEN PROVING GROUND,  
MD. ON 4-5 APRIL 1973, SPONSORED BY THE  
AMERICAN ORDNANCE ASSOCIATION.

(U)

DESCRIPTIVE NOTE: SPECIAL PUBLICATION,  
SEP 73 138P HILSMEIER, ALLEN E. ;  
REPT. NO. EA-SP-1800-16, EA-EQ-SP-73001

UNCLASSIFIED REPORT

DESCRIPTORS: \*EXPLOSIVE ORDNANCE DISPOSAL,  
\*DISPOSAL, HAZARDS, AIR POLLUTION, WATER  
POLLUTION, SOLID WASTES, LIQUID WASTES,  
CHEMICALS

(U)

IDENTIFIERS: \*HAZARDOUS MATERIALS, \*SOLID WASTE  
DISPOSAL, \*LIQUID WASTE DISPOSAL

(U)

;CONTENTS: ENVIRONMENTAL PROTECTION;  
HAZARDOUS MATERIALS CONTROL PROGRAMS IN THE  
DEPARTMENT OF DEFENSE; DEPARTMENT OF DEFENSE  
RESEARCH AND DEVELOPMENT IN HAZARDOUS MATERIAL  
DISPOSAL; NAVAL ORDNANCE ROTE PROGRAM ON POLLUTION  
ABATEMENT; EPA DESIGNATION OF HAZARDOUS MATERIALS  
FOR SPILL CONTROL; EPA RESEARCH AND DEVELOPMENT  
ACTIVITIES RELATING TO INDUSTRIAL SOURCES OF  
POLLUTION; POLLUTION CONTROL FROM EXPLOSIVE  
PRODUCTION WASTE STREAMS; PREVENTION AND CONTROL OF  
HAZARDOUS MATERIAL SPILLS; ADVANCES IN RECLAMATION  
TECHNOLOGY BY HIGH-TEMPERATURE INCINERATION;  
NATIONAL DISPOSAL SITES FOR HAZARDOUS WASTES;  
ENVIRONMENTAL CONTROL IN ROCKET PROPULSION  
RESEARCH; PESTICIDE WASTE DISPOSAL; NUCLEAR WASTE  
DISPOSAL; USE OF SALT REPOSITORIES FOR LONG-TERM  
RETENTION OF HAZARDOUS WASTE MATERIAL; THE  
EDGEWOOD ARSENAL ROLE IN ENVIRONMENTAL  
TECHNOLOGY.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 771 715 13/2  
DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA

ENVIRONMENTAL POLLUTION: SANITARY  
ENGINEERING AND INDUSTRIAL WASTE. (U)

DESCRIPTIVE NOTE: REPORT BIBLIOGRAPHY JAN 71-JUN 73.  
DEC 73 107P  
REPT. NO. DDC-TAS-73-75

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UPDATES AD-737 500.

DESCRIPTORS: \*SANITARY ENGINEERING, \*INDUSTRIES,  
\*WASTES, WASTE DISPOSAL, WATER POLLUTION, WASTE  
TREATMENT, RECLAMATION, LIFE SUPPORT, CLOSED  
ECOLOGICAL SYSTEMS, RADIOACTIVE WASTES,  
BIBLIOGRAPHIES (U)

THE BIBLIOGRAPHY IS COMPRISED OF 70 CITATIONS OF  
UNCLASSIFIED REPORTS DEALING WITH SANITARY AND  
INDUSTRIAL WASTES. INCLUDED ARE REFERENCES TO  
REPORTS ON POLLUTION OF OCEANS, RIVERS, AND ESTUARIES  
BY THE DISPOSAL OF GARBAGE, SEWAGE, AND WASTES. IN  
ADDITION TO AFOREMENTIONED REFERENCES, CITATIONS OF  
VARIOUS METHODS OF RECLAMATION AND TREATMENT OF WASTE  
ARE PRESENTED FROM LIFE SUPPORT AND CLOSED ECOLOGICAL  
SYSTEMS WHICH MAY PROVE BENEFICIAL TO ONGOING  
RESEARCH AND OPERATIONS FOR CONTROLLING ENVIRONMENTAL  
POLLUTION. CORPORATE AUTHOR-MONITORING  
AGENCY, SUBJECT, TITLE, PERSONAL AUTHOR,  
CONTRACT, AND REPORT NUMBER INDEXES ARE  
INCLUDED. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 771 745 13/2 13/10  
NATIONAL MATERIALS ADVISORY BOARD (NAS-NAE) WASHINGTON D  
C

MATERIALS FOR WET OXIDATION PROCESSING  
EQUIPMENT (SHIPBOARD).

(U)

DESCRIPTIVE NOTE: FINAL REPT.

NOV 73 90P

REPT. NO. NMAB-312

CONTRACT: DA-49-083-OSA-3131

UNCLASSIFIED REPORT

DESCRIPTORS: \*SEWAGE TREATMENT, \*SHIPBOARD, WASTE  
TREATMENT, PROCESSING EQUIPMENT, TITANIUM,  
ADDITIVES, PLATINUM, DESIGN, OXIDATION,  
CORROSION, TANTALUM, CERAMICS, LININGS, HIGH  
TEMPERATURE, PRESSURE, CATALYSTS

(U)

IDENTIFIERS: \*SEWAGE DISPOSAL, SHIPBOARD SEWAGE  
TREATMENT SYSTEMS, \*WET OXIDATION

(U)

THE REPORT PROVIDES AN OVERVIEW OF THE WET  
OXIDATION PROCESS AND THE POTENTIAL MATERIALS OF  
CONSTRUCTION FOR THE REACTION VESSEL (FOR SHIPBOARD  
WASTES). THE WET OXIDATION PROCESS REQUIRES THE  
CONTAINMENT OF CORROSIVE PRODUCTS (THE MATERIAL  
BEING PROCESSED CAN RANGE FROM VERY ACIDIC TO  
SLIGHTLY BASIC AND OVER A BROAD SPECTRUM OF  
WASTES), AT ELEVATED TEMPERATURES AND PRESSURES.  
WET OXIDATION SYSTEMS CAN BE CONSTRUCTED FROM  
COMMERCIALY PURE TITANIUM AS WELL AS FROM TITANIUM  
ALLOYED WITH PALLADIUM (.12-.25%). THIS TYPE  
OF SYSTEM, IT IS FELT, CAN BE OPERATED SAFELY AT  
APPROXIMATELY 500F WITH REASONABLE ASSURANCE OF  
MODERATE LIFE (APPROXIMATELY 10 YEARS).  
HOWEVER, SHOULD A LONGER LIFE SYSTEM BE DESIRED AND  
ONE WHICH IS VIRTUALLY INDESTRUCTIBLE FROM A CHEMICAL  
POINT OF VIEW, A TANTALUM-LINED AND COATED TITANIUM  
SYSTEM WOULD PROVIDE THE BEST CHOICE OF MATERIALS.  
(MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 775 152 7/1 13/2  
HOUSTON RESEARCH INC TEX

CYANIDE DISPOSAL BY OZONE OXIDATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. APR 72-NOV 73,  
FEB 74 112P GARRISON, RICHARD L. ; MAUK,  
CHARLES E. ; PRENGLE, H. WILLIAM, JR;  
REPT. NO. HRI-7149  
CONTRACT: F29601-72-C-0065  
PROJ: AF-683M  
MONITOR: AFWL TR-73-212

UNCLASSIFIED REPORT

DESCRIPTORS: \*CYANIDES, METAL COMPLEXES,  
OXIDATION, OZONE, WATER POLLUTION,  
ELECTROPLATING, COLOR FILM, PHOTOGRAPHIC  
PROCESSING EQUIPMENT, WASTE TREATMENT, MASS  
TRANSFER, REACTION KINETICS, PROTOTYPES,  
FABRICATION

(U)

IDENTIFIERS: \*WATER POLLUTION CONTROL, \*INDUSTRIAL  
WASTE TREATMENT, CHEMICAL REMOVAL (WATER  
TREATMENT), WATER POLLUTION CONTROL EQUIPMENT

(U)

AQUEOUS CYANIDE AND COMPLEXED METAL CYANIDE WASTES  
FROM THE AIR FORCE'S ROUTINE ELECTROPLATING  
OPERATIONS AND COLOR PHOTOGRAPHIC FILM PROCESSING  
REQUIRE EXTENSIVE TREATMENT TO SATISFY STRINGENT  
WATER QUALITY STANDARDS. A PROCESS WAS DEVELOPED BY  
LABORATORY EXPERIMENTATION USING OZONE FOR THE TOTAL  
DESTRUCTION OF CYANIDE AND METAL CYANIDE COMPLEXES.  
MASS TRANSFER AND KINETIC RATE CONSTANTS WERE  
DETERMINED BY EXPERIMENTATION. A PILOT SCALE  
PROTOTYPE WAS DESIGNED, FABRICATED, AND OPERATED TO  
DESTROY ACTUAL AIR FORCE CYANIDE WASTES. IN  
ALL CASES, CYANIDE CONCENTRATION IN THE EFFLUENT WAS  
REDUCED TO BELOW THE DETECTABLE LIMIT. A  
CONCEPTUAL DESIGN OF A FULL SCALE SYSTEM TO TREAT  
ELECTROPLATING WASTE IS INCLUDED. (MODIFIED AUTHOR  
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 776 254 18/4 18/8 8/10  
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

INSTRUMENTATION RESEARCH FOR RADIATION  
MEASUREMENTS IN THE MARINE ENVIRONMENT.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1969-73,  
FEB 74 10P FOLSOM, T. R. ;  
REPT. NO. SIO-REF-74-4  
CONTRACT: N00014-69-A-0200-6011  
PROJ: NR-083 234

UNCLASSIFIED REPORT

DESCRIPTORS: \*RADIATION MEASURING INSTRUMENTS,  
\*RADIOACTIVE WASTES, \*RADIOACTIVITY, \*OCEANS,  
NATURAL RADIOACTIVITY, RADIOACTIVE CONTAMINATION

(U)

THE REPORT SUMMARIZES FOUR YEARS CONTINUANCE OF  
RESEARCH INTO BEHAVIORS OF MINUTE TRACES OF  
ARTIFICIAL AND NATURAL RADIOACTIVITY IN THE OCEAN AND  
DEVELOPMENT OF MEANS FOR DETECTING AND MEASURING  
EXTREMELY SMALL CHANGES OF IONIZING RADIATION IN THE  
MARINE ENVIRONMENT. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 777 096 7/1 13/2  
NAVAL ACADEMY ANNAPOLIS MD ENVIRONMENTAL PROTECTION  
RESEARCH AND DEVELOPMENT TEAM

HYDROGEN PEROXIDE TREATMENT OF EFFULENT  
RESULTING FROM WET AIR OXIDATION OF  
SHIPBOARD WASTES. (U)

DESCRIPTIVE NOTE: INTERIM REPT. 1 JUL-31 DEC 73,  
FER 74 12P KOUBEK, EDWARD ;  
REPT. NO. USNA-EPRD-3

UNCLASSIFIED REPORT

DESCRIPTORS: \*HYDROGEN PEROXIDE, \*WASTE TREATMENT,  
\*SEWAGE TREATMENT, OXIDATION, SHIPBOARD (U)  
IDENTIFIERS: CHEMICAL OXYGEN DEMAND, WET  
OXIDATION, \*SHIPBOARD SEWAGE TREATMENT SYSTEMS (U)

AT PRESENT, EFFULENTS RESULTING FROM WET AIR  
OXIDATION OF SHIPBOARD WASTES ARE TOO HIGH IN COD  
TO BE DISCHARGED OVERBOARD. THIS REPORT DESCRIBES  
A METHOD WHEREBY THE EFFULENT STREAM MAY BE FURTHER  
OXIDIZED, OR 'POLISHED', WITH HYDROGEN PEROXIDE IN  
ORDER TO MEET THE COD LIMITS IMPOSED BY THE  
U.S. ENVIRONMENTAL PROTECTION AGENCY.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 777 403 13/2 1974  
NAVAL ORDNANCE LAB WHITE OAK MD

PROCEEDINGS OF THE FIRST CONFERENCE ON THE  
ENVIRONMENTAL EFFECTS OF EXPLOSIVES AND  
EXPLOSIONS (MAY 30-31, 1973).

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
FEB 74 191P YOUNG, GEORGE A. ;  
REPT. NO. NOLTR-73-223  
PROJ: ORD-332-005/UF53-554-301

UNCLASSIFIED REPORT

DESCRIPTORS: \*EXPLOSIVES, \*AIR POLLUTION, \*WATER  
POLLUTION, \*EXPLOSION EFFECTS, \*MEETINGS, WASTE  
DISPOSAL, MORTALITY RATES, DECOMPOSITION, SHOCK  
WAVES, NUCLEAR EXPLOSIONS, UNDERGROUND EXPLOSIONS,  
UNDERWATER EXPLOSIONS

(U)

IDENTIFIERS: INDUSTRIAL WASTES, INDUSTRIAL WASTE  
TREATMENT, FISHKILL

(U)

THE REPORT IS A COMPILATION OF PAPERS PRESENTED AT  
THE FIRST NAVAL ORDNANCE LABORATORY  
CONFERENCE ON THE ENVIRONMENTAL EFFECTS OF  
EXPLOSIVES AND EXPLOSIONS. THE TOPICS COVERED  
INCLUDED THE MANUFACTURE OF EXPLOSIVES AND WEAPONS;  
THE TESTING AND USE OF EXPLOSIVES IN THE AIR, GROUND,  
AND WATER; AND THE DISPOSAL OF SCRAPS, WASTEWATER,  
AND LARGE ITEMS OF OBSOLETE ORDNANCE. PHYSICAL,  
CHEMICAL, AND BIOLOGICAL EFFECTS OF BOTH NUCLEAR AND  
CONVENTIONAL EXPLOSIONS WERE TREATED.

(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 777 480 13/2 13/10  
JOHNSON (BERNARD) INC HOUSTON TEX

SHIPS WASTE OFFLOAD SYSTEM STUDY.  
SENSITIVITY ANALYSIS, (U)

MAR 74 154P DAVIS, EDWARD J. ;  
CONTRACT: N00025-72-C-0042

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPPLEMENT TO REPORT DATED MAY 73,  
AD-763 454.

DESCRIPTORS: \*SHIPS, \*SANITARY ENGINEERING, \*WASTE  
DISPOSAL, SOLID WASTES, PIPELINES, FIELD TESTS,  
WASTES(SANITARY ENGINEERING),  
WASTES(INDUSTRIAL), HOSES, OILS, BARGES,  
SEWAGE DISPOSAL, COSTS, TABLES(DATA),  
SENSITIVITY (U)

IDENTIFIERS: LIQUID WASTE DISPOSAL, SOLID WASTE  
DISPOSAL, HARBOR FACILITIES, MATERIALS HANDLING,  
DESIGN, SENSITIVITY ANALYSIS (U)

CONTAINED IN THE REPORT ARE THE RESULTS OF  
INVESTIGATIONS AND STUDIES OF FIVE ALTERNATIVE  
COMBINATIONS OF SHIPS' WASTE OFFLOAD SYSTEM  
COMPONENTS AS APPLIED TO ACTUAL FIELD CONDITIONS OF  
SHIPS' PRESENCE AND ACTIVITY THAT OCCURRED AT THE  
SAN DIEGO NAVAL COMPLEX. THE SYSTEM  
COMPONENTS CONSIDERED IN THE ANALYSES INCLUDED  
FLEXIBLE HOSES, FLOATING PIPELINE UNITS,  
ENVIRONMENTAL BOXES, AUXILIARY CRAFT, BARGES AND  
TUGS. THE SHIPS' WASTES TO BE HANDLED BY THE  
OFFLOAD SYSTEMS WERE (1) SANITARY WASTE, (2)  
HOTEL WASTE, (3) OILY WASTE, (4) INDUSTRIAL  
WASTE AND (5) SOLID WASTE. FROM THE PHASE I  
WORK EFFORT IT HAD BEEN CONCLUDED THAT THESE FIVE  
WASTES WERE BEST HANDLED AS THREE WASTE STREAMS:  
(1) SANITARY PLUS HOTEL, (2) OILY, (3)  
CONTAINERIZED INDUSTRIAL PLUS SOLID. THE RESULTS  
OF THE ANALYSES ARE PRESENTED IN TERMS OF LIFE CYCLE  
COSTS FOR ALL FIVE COMBINATIONS OF SYSTEM  
COMPONENTS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 778 162 13/2  
ARMY CONSTRUCTION ENGINEERING RESEARCH LAB CHAMPAIGN  
ILL

INDUSTRIAL WASTEWATERS, RED RIVER ARMY  
DEPOT, TEXARKANA, TEXAS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
APR 74 77P FILECCIA, R. J. MATHERLY,  
J. E. PORTE, H. A. ;  
REPT. NO. CERL-TR-E-24

UNCLASSIFIED REPORT

DESCRIPTORS: \*WASTE TREATMENT, \*MILITARY FACILITIES,  
INDUSTRIES, STANDARDS, REMOVAL, OILS, GREASES,  
PHOSPHATES, PH FACTOR, CLASSIFICATION, COSTS,  
COLLECTION, PUMPS, MAINTENANCE  
IDENTIFIERS: RED RIVER ARMY DEPOT,  
TEXARKANA (TEXAS), DESIGN CRITERIA,  
\*INDUSTRIAL WASTE TREATMENT

(U)

(U)

THE STUDY DESCRIBES INDUSTRIAL WASTEWATERS  
DISCHARGED FROM THE MAINTENANCE AREA OF RED RIVER  
ARMY DEPOT, TEXARKANA, TX. DESIGN CRITERIA  
FOR INDUSTRIAL WASTEWATER TREATMENT FACILITIES AND  
RECOMMENDATIONS FOR REDUCING INDUSTRIAL WASTEWATER  
VOLUME ARE PROVIDED. FIELD AND LABORATORY STUDIES  
AND MEASUREMENTS ARE MADE WITH REGARD TO THE  
CHARACTER AND TREATMENT OF WASTEWATER. DESIGN  
CRITERIA FOR A TREATMENT FACILITY TO AFFORD FREE OIL  
AND GREASE REMOVAL, PHOSPHATE REMOVAL, AND PH  
ADJUSTMENT ARE GENERATED. THE TREATMENT IS TO  
PRECEDE BIOLOGICAL TREATMENT IN AN EXISTING SECONDARY  
TREATMENT FACILITY AT LONE STAR ARMY  
AMMUNITION PLANT. (MODIFIED AUTHOR  
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 781 244 7/1

ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

APPLICATION OF FILTRATION THROUGH SEMI-  
PERMEABLE MEMBRANES FOR TREATMENT OF WASTES.

(U)

MAY 74 11P KEPINSKI, JOSEF ; CHLUBEK,  
MIKODEM ;  
REPT. NO. FSTC-HT-23-2343-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PRZEMYSŁ CHEMICZNY  
(POLAND) V50 N12 P788-791 1971.

DESCRIPTORS: •REVERSE OSMOSIS, •SEWAGE TREATMENT,  
DESALINATION, MEMBRANES, WASTE TREATMENT,  
POLAND, TRANSLATIONS

(U)

IDENTIFIERS: •INDUSTRIAL WASTE TREATMENT

(U)

THE BASIS OF THE HYPERFILTRATION (REVERSE  
OSMOSIS) PROCESS IS PRESENTED, WITH DISCUSSION OF  
CHARACTERISTICS OF MEMBRANES AND HOLLOW FIBERS, AND  
APPLICATIONS IN TREATMENT OF INDUSTRIAL AND MUNICIPAL  
WASTES.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 782 480 13/2  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX

SURVEY OF WASTEWATER DISCHARGE: ELMENDORF  
AFB, ALASKA, (U)

JUL 74 60P THOMAS, JERRY F. ; PAULS,  
CHESTER F. ;  
REPT. NO. EHL(K)-74-11

UNCLASSIFIED REPORT

DESCRIPTORS: \*SEWAGE TREATMENT, \*WATER POLLUTION,  
OILS, WATER TREATMENT, LUBRICATING OILS,  
SOLVENTS, FUELS, FUNGICIDES, WASTE DISPOSAL,  
DEICING MATERIALS, FIRE EXTINGUISHING AGENTS, AIR  
FORCE FACILITIES, ALASKA (U)  
IDENTIFIERS: ELMENDORF AIR FORCE BASE, WATER  
QUALITY, OIL POLLUTION, \*WATER POLLUTION SAMPLING,  
LAGOONS(PONDS), AERATION (U)

THE REPORT CONTAINS THE RESULTS OF A WASTEWATER  
SURVEY AT ELMENDORF AFB, ALASKA, BETWEEN 16 AND  
22 JUNE 1972. MOST WASTEWATERS GENERATED AT  
ELMENDORF AFB ARE DISCHARGED TO THE SANITARY  
SEWERAGE SYSTEM FOR TREATMENT BY THE GREATER  
ANCHORAGE AREA BOROUGH SEWAGE TREATMENT  
SYSTEM. THIS SYSTEM PROVIDES PRIMARY TREATMENT.  
THERE WAS VISUAL EVIDENCE OF OIL CONTAMINATED  
WATERS HAVING ENTERED THE STORM DRAINAGE SYSTEM.  
THIS PORTION OF THE STORM DRAINAGE SYSTEM  
DISCHARGES INTO A SWAMPY AREA WHICH DRAINS INTO  
SHIP CREEK. DURING THE SURVEY A VISIBLE OIL  
FILM WAS PRESENT AT THE OUTFALL IN THE SWAMP. THE  
6981ST SECURITY GROUP IS SERVICED BY AN AERATED  
LAGOON TO HANDLE THE WASTES GENERATED BY THE ASSIGNED  
PERSONNEL. RECOMMENDATIONS WERE MADE REGARDING  
STORAGE AND DISPOSAL OF WASTE LUBRICATING OILS, FUELS  
AND SOLVENTS. A SAMPLING AND ANALYSES PROGRAM WAS  
OUTLINED SO THAT COMPLIANCE WITH APPLICABLE WATER  
QUALITY STANDARDS COULD BE DEMONSTRATED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 784 445 7/1 13/2  
GENERAL ELECTRIC CO LYNN MASS DIRECT ENERGY CONVERSION  
PROGRAMS

RECLAMATION OF ACID RINSE WATER.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,  
JUL 74 47P DEMPSEY, R. M. ; LACONTI,  
A. B. ;  
CONTRACT: DAAK02-73-C-0407

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*MEMBRANES, \*POLYPHENYLENE OXIDE,  
FABRICATION, PERFORMANCE(ENGINEERING), REVERSE  
OSMOSIS, POLYPROPYLENE, SUBSTRATES, FILMS,  
ACIDS, SULFATES, NITRATES, POLYMERS,  
NEUTRALIZATION, ION EXCHANGE, DESALINATION,  
SULFONATES, WASTE TREATMENT, WASTE WATER,  
CASTING

(U)

IDENTIFIERS: \*SPIRAL WOUND MEMBRANES, INDUSTRIAL  
WASTE TREATMENT, \*WATER POLLUTION CONTROL EQUIPMENT,  
\*REVERSE OSMOSIS DESALINATION

(U)

MANUFACTURING TECHNIQUES WERE MODIFIED AND  
OPTIMIZED FOR PREPARING COMPOSITE FILMS OF SULFONATED  
P30 (POLYPHENYLENE OXIDE). POLYMER ION  
EXCHANGE CAPACITY (IEC) WAS COATED ONTO PROMISING  
POROUS SUBSTRATE MATERIALS USING A MENISCUS COATING  
TECHNIQUE. COMPOSITE FILMS OF THE 1.5 IEC  
POLYMER ON CELGARD KKK-2 POROUS POLYPROPYLENE  
APPEARED TO OFFER THE MOST PROMISE FOR MEETING THE  
CONTRACT REQUIREMENTS OF 10 GSF/D FLUX AND 90% ACID  
REJECTION OF A FEED CONTAINING 0.2% H2SO4 AND  
0.1% HNO3. THREE TRIAL SPIRAL WOUND MODULES WERE  
FABRICATED. THE MODULES WERE EVALUATED.  
MANUFACTURING PROCEDURES WERE DEVELOPED TO PREPARE  
TIGHTER COMPOSITE FILMS OF S-P30 ON CELGARD  
KKK-2 POROUS POLYPROPYLENE. IT IS SUGGESTED THAT  
THE MENISCUS COATING TECHNIQUE BE EXTENDED TO  
DEVELOPMENT OF COMPOSITE FILMS OF S-P30 ON  
LAMINATED POROUS POLYSULFONE (DACRON SAILCLOTH  
BACKING). PRACTICAL CASTING SOLVENT SYSTEMS  
COMPATIBLE WITH POLYSULFONE HAVE BEEN DEVELOPED.  
(MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 784 820 13/2  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

SURVEY OF WASTEWATER CHARACTERISTICS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
APR 73 55P PAULS, CHESTER F. ;  
REPT. NO. EHL-M-73M-3  
PROJ: EHL-M-WDF-303

UNCLASSIFIED REPORT

DESCRIPTORS: \*WATER POLLUTION, \*PHOTOGRAPHIC  
PROCESSING, \*WASTES(INDUSTRIAL), \*SEWAGE  
TREATMENT, \*MILITARY FACILITIES, CORROSION, WASTE  
WATER, SEWAGE DISPOSAL, MAINTENANCE, CHEMICAL  
PROPERTIES, OXYGEN, SAMPLING, PH FACTOR, WATER  
QUALITY, CALIFORNIA

(U)

IDENTIFIERS: BEALE AIR FORCE BASE, WATER  
QUALITY DATA, BIOCHEMICAL OXYGEN DEMAND

(U)

A WASTEWATER SURVEY OF BEALE AFB WAS  
ACCOMPLISHED. THE CHARACTERISTICS OF THE PHOTO  
PROCESSING WASTEWATER, THE OPERATIONS AREA  
WASTEWATER, AND THE INFLUENT AND EFFLUENT WASTEWATER  
OF THE DOMESTIC SEWAGE TREATMENT PLANT WERE  
DETERMINED. MAINTENANCE AREAS WERE VISITED AND  
RECOMMENDATIONS TO IMPROVE METHODS OF CONTROL AND  
TREATMENT OF INDUSTRIAL WASTE MATERIALS ARE  
SPECIFIED. A CORROSION PROBLEM IN THE SEWERAGE  
SYSTEM SERVING THE OPERATIONS AREA WAS INVESTIGATED  
AND RECOMMENDATIONS TO ALLEVIATE THIS PROBLEM ARE  
PRESENTED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 785 227 13/2  
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER ANNAPOLIS  
MD

DISPERSION OF SANITARY WASTEWATER DISCHARGES  
FROM NAVY SHIPS,

(U)

AUG 74 152P ALIG, CRAIG S. ;  
REPT. NO. NSRDC-4194  
PROJ: SF53-554  
TASK: SF53-554-706, 17225

UNCLASSIFIED REPORT

DESCRIPTORS: \*SEWAGE DISPOSAL, \*WATER POLLUTION,  
\*NAVAL VESSELS, COASTAL REGIONS, DYES, WASTE  
WATER, DISPERSION, TRACER STUDIES, SEWAGE,  
COLIFORM BACTERIA, CALIFORNIA, VIRGINIA, AERIAL  
RECONNAISSANCE, OXYGEN, WATER QUALITY, AMMONIA,  
NITROGEN COMPOUNDS, PHOSPHATES

(U)

IDENTIFIERS: RHODAMINE DYE, BIOCHEMICAL OXYGEN  
DEMAND, SAN CLEMENTE ISLAND, DISSOLVED OXYGEN,  
SUSPENDED SOLIDS, NORFOLK (VIRGINIA)

(U)

ASSESSING THE IMPACT OF NAVY SHIPBOARD SANITARY  
WASTE DISCHARGES WITHIN THE CONTIGUOUS ZONE OF THE  
UNITED STATES REQUIRES GENERATION OF DATA ON THE  
DISPERSION AND FATE OF POLLUTANTS FROM SHIPBOARD  
SOURCES. TO GENERATE DATA APPLICABLE FOR THE 3- TO  
12-MILE COASTAL ZONE, STUDIES WERE CONDUCTED IN THE  
NORFOLK, VA, AREA, AND SAN CLEMENTE ISLAND,  
CALIFORNIA. CONTROLLED RELEASES WERE MADE OF  
SANITARY WASTEWATER AND TRACER DYE MIXTURES.  
(AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 785 372 13/2  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX

SURVEY OF WASTEWATER TREATMENT AND DISPOSAL -  
LAUGHLIN AFB TX.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
AUG 74 65P WILLIAMS, CARLTON R. ;  
REPT. NO. EHL(K)-74-19

UNCLASSIFIED REPORT

DESCRIPTORS: \*SEWAGE TREATMENT,  
\*WASTES(INDUSTRIAL), \*MILITARY FACILITIES,  
SEDIMENTATION, WASTE WATER, ACTIVATED SLUDGE  
PROCESS, OXIDATION, WATER QUALITY, GROUND WATER,  
SURFACE WATERS, EVAPORATION, STORMS, TEXAS  
IDENTIFIERS: \*LAUGHLIN AIR FORCE BASE, STORM  
RUNOFF, OXIDATION PONDS, WATER QUALITY DATA

(U)

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THE REPORT CONTAINS DATA AND RESULTS OF A FIELD  
EVALUATION OF WASTEWATER TREATMENT CONDUCTED AT  
LAUGHLIN AFB BY A REPRESENTATIVE OF THE USAF  
ENVIRONMENTAL HEALTH LABORATORY, KELLY AFB  
TX (EHL/K). THE WASTEWATER TREATMENT PLANT  
(WWTP) CONSISTS OF PRIMARY SEDIMENTATION, PRIMARY  
SLUDGE DIGESTION, AND OXIDATION PONDS. THE PLANT  
WAS FOUND TO PROVIDE GOOD TREATMENT TO AN AVERAGE  
DAILY FLOW OF APPROXIMATELY 0.6 MGD OF MODERATE  
STRENGTH DOMESTIC SEWAGE. CERTAIN INDUSTRIAL  
WASTEWATERS ARE DISCHARGED VIA THE STORM WATER SYSTEM  
TO A TOTAL EVAPORATION POND FOR DISPOSAL. PROBLEMS  
ASSOCIATED WITH THIS SYSTEM DURING WET WEATHER  
CONDITIONS HAVE RESULTED IN THE BASE'S SUBMISSION OF  
A MILITARY CONSTRUCTION PROJECT TO SEGREGATE  
INDUSTRIAL AND STORM WATERS. THE INDUSTRIAL  
WASTEWATER WILL BE AFFORDED APPROPRIATE PRETREATMENT  
AND DISCHARGED TO THE SANITARY SEWER SYSTEM.  
(MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 785 373 13/2  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX  
WATER POLLUTION STUDY OF MALABEAM LAKE,  
GREENLAW BROOK AND ADJACENT STREAMS ON  
LORING AFB, MAINE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
SEP 74 84P DAVIDSON, JERRY M. ; JONES,  
JAMES M. ;  
REPT. NO. EHL(K)-74-22

UNCLASSIFIED REPORT

DESCRIPTORS: \*WATER POLLUTION, \*MILITARY FACILITIES,  
WATER QUALITY, STANDARDS, CHEMICAL PROPERTIES,  
PESTICIDES, SAMPLING, COLIFORM BACTERIA, OXYGEN,  
INVERTEBRATES, AQUATIC ANIMALS, (U)  
WASTES (INDUSTRIAL), SEWAGE, MAINE  
IDENTIFIERS: \*LORING AIR FORCE BASE, (U)  
MALABEAM LAKE, GREENLAW BROOK, DISSOLVED  
OXYGEN, WATER QUALITY DATA (U)

A STUDY OF THE AQUATIC ENVIRONMENT OF LORING  
AFB WAS CONDUCTED BETWEEN 18-29 JUN 1973 IN ORDER  
TO ASSESS LEVELS OF POLLUTION IN MALABEAM LAKE,  
GREENLAW BROOK AND OTHER ON-BASE STREAMS. THE  
EAST BRANCH OF GREENLAW BROOK EXHIBITED EVIDENCE  
OF CHRONIC POLLUTION RESULTING FROM THE DISCHARGE OF  
INDUSTRIAL WASTES. FURTHER DOWNSTREAM, GREENLAW  
BROOK WAS POLLUTED WITH RAW AND PARTIALLY TREATED  
SEWAGE. RESULTS OF SAMPLING REVEALED NO POLLUTION  
PROBLEMS IN THE WEST BRANCH OF GREENLAW BROOK OR  
MALABEAM LAKE THAT WOULD BE HARMFUL TO HUMAN  
HEALTH. (MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 786 336 13/10 13/11  
CIVIL ENGINEERING LAB (NAVY) PORT HUENEME CALIF

TEST AND EVALUATION OF HOSES AND CONNECTORS  
FOR SHIP-TO-SHORE WASTEWATER TRANSFER. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE JUN 71-FEB 74,  
SEP 74 24P CAMPBELL, F. J. ;  
REPT. NO. CEL-TN-1354

UNCLASSIFIED REPORT

DESCRIPTORS: \*MARINE TERMINALS, \*SHIPS, \*WASTE  
DISPOSAL, SEWAGE TREATMENT, PLASTICS, RUBBER,  
TEST METHODS, WATER POLLUTION, TRANSFER,  
CONNECTORS, HOSES (U)  
IDENTIFIERS: SHIPBOARD SEWAGE TREATMENT SYSTEMS,  
WATER POLLUTION ABATEMENT (U)

HOSE AND HOSE CONNECTOR COMPONENTS THAT ARE  
APPLICABLE FOR USE IN SHIP-TO-SHORE SEWAGE TRANSFER  
OPERATIONS ARE IDENTIFIED, AND THE RESULTS OF FIELD  
AND LABORATORY TESTS ARE PRESENTED. HOSE CLAMPING  
AND MOUNTING PROCEDURES ARE EVALUATED AND HOSE/  
CONNECTOR SYSTEM TENSILE STRENGTHS ARE ESTABLISHED.  
AN EXPERIMENTAL PLASTIC HOSE, AN EXPERIMENTAL  
RUBBER HOSE, QUICK-DISCONNECT BRONZE CONNECTORS AND A  
3/4-INCH WIDE BAND-TYPE CLAMPING MATERIAL WERE FOUND  
TO BE THE BEST-SUITED MATERIALS OF THOSE TESTED FOR  
WASTE TRANSFER OPERATIONS. (MODIFIED AUTHOR  
ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 787 026 11/6 13/2  
AUSTRALIAN INST OF METALS PARKVILLE

TRADE WASTE TREATMENT IN THE METAL  
FINISHING INDUSTRY,

(U)

74 9P ESMORE, L. H. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN PROCEEDINGS OF THE ANNUAL  
CONFERENCE OF THE AUSTRALIAN INST. OF METALS,  
CHRISTCHURCH (NEW ZEALAND) 20-24 MAY 74, P70-  
76.

DESCRIPTORS: \*METALS, \*SURFACE FINISHING, \*WASTE  
DISPOSAL, \*WATER POLLUTION, MEETINGS, AUSTRALIA  
IDENTIFIERS: WATER POLLUTION CONTROL

(U)

(U)

THE ERA OF UNCONTROLLED WASTE DISCHARGES TO SEWERS  
AND STREAMS IS FAST APPROACHING AN END. CENTRAL  
TREATMENT PLANTS WHICH TAKE WASTE AND TREAT IT ON A  
FEE BASIS ARE PLANNED BUT NOT YET OPERATING. THE  
INSTALLATION OF WASTE TREATMENT PLANT MAY INVOLVE  
CONSIDERABLE ALTERATIONS TO A METAL FINISHING SHOP  
INVOLVING LAYOUT, POSSIBLY RE-SITING AND THE PURCHASE  
AND INSTALLATION OF ADDITIONAL EQUIPMENT. CAREFUL  
STUDY SHOULD INVOLVE CONSERVATION OF WATER AND  
PARTICULARLY PROCESS CHEMICALS - WASTED CHEMICALS  
REQUIRE TREATMENT CHEMICALS, A DOUBLE LOSS. WASTED  
WATER MEANS LARGE WASTE TREATMENT PLANTS.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD- 787 061 13/2 7/1  
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER ANNAPOLIS  
MD

EXPERIMENTAL INVESTIGATION OF THE WET  
OXIDATION DESTRUCTION OF SHIPBOARD WASTE  
STREAMS, (U)

OCT 74 63P SCHATZBERG, PAUL ; JACKSON,  
DREW F. ; KELLY, C. M. ;  
REPT. NO. NSRDC-4416, NSRDC-28-927  
PROJ: SF53-554  
TASK: SF53-554-706, 14057

UNCLASSIFIED REPORT

DESCRIPTORS: \*SEWAGE TREATMENT, KATES, REVERSE  
OSMOSIS, CATALYSTS, WASTES (SANITARY  
ENGINEERING), WASTE WATER, SHIPBOARD, REACTION  
KINETICS, OXIDATION, OILS, CELLULOSE, GLUCOSE,  
SLUDGE, HIGH PRESSURE (U)  
IDENTIFIERS: \*WET OXIDATION, \*SHIPBOARD SEWAGE  
TREATMENT SYSTEMS (U)

INCREASINGLY STRINGENT WATER QUALITY REGULATIONS  
ANTICIPATE THE NEED FOR TREATING ALL SHIPBOARD WASTE  
STREAMS CONTAINING COMBUSTIBLE MATTER. WET AIR  
OXIDATION OR PRESSURIZED AQUEOUS COMBUSTION CONDUCTED  
AT 475 TO 600F AT OPERATING PRESSURES FROM 600 TO  
1850 POUNDS PER SQUARE INCH GAGE WAS INVESTIGATED AS  
ONE MEANS FOR THE ULTIMATE DESTRUCTION OF ORGANIC  
WASTES. THIS PROCESS WAS INVESTIGATED BY CONDUCTING  
EXPERIMENTS IN A 1-GALLON PRESSURE VESSEL WITH A  
VARIETY OF WASTES UNDER DIFFERENT CONDITIONS. WASTE  
TYPES USED IN THE EXPERIMENTS WERE SANITARY, FOOD,  
OIL, MUNICIPAL SLUDGE, GLUCOSE, AND CELLULOSE.  
RESULTS SHOWED THAT THE WET OXIDATION PROCESS OBEYS  
FIRST-ORDER KINETICS CONSISTING OF TWO SEPARATE AND  
DISTINCT REACTIONS. CATALYSTS HAVE THEIR MAIN  
INFLUENCE ON THE FAST REACTION, INCREASING ITS RATE  
BY A FACTOR OF THREE. ADDITIONAL REMOVAL OF ORGANIC  
MATTER CAN BE ACHIEVED BY FURTHER PROCESSING THE WET  
OXIDATION EFFLUENT THROUGH A REVERSE OSMOSIS  
MEMBRANE. (MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 830 170 13/2  
REX CHAINBELT INC MILWAUKEE WIS

ENGINEERING DESIGN STUDY FOR THE DEVELOPMENT OF A  
SELF-CONTAINED, AIR-TRANSPORTABLE WASTEWATER  
TREATMENT PROTOTYPE. (U)

DESCRIPTIVE NOTE: INTERIM TECHNICAL REPT. 4 MAY-4 SEP  
67,

FEB 68 208P GEINOPOLOS, ANTHONY ; MASON,  
DONALD G. ; WULLSCHLEGER, RICHARD E. ;  
CONTRACT: DAAK02-67-C-0398  
TASK: 53

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER, \*WASTES(SANITARY ENGINEERING)),  
(\*PURIFICATION, WATER), ODORS, OXIDATION, IRON  
COMPOUNDS, ABSORPTION, CALCIUM COMPOUNDS, OXIDES,  
CARBON, CATALYSTS, EVAPORATION, CONDENSATION,  
GERMICIDES, OXIDIZERS, ELECTROCHEMISTRY, ION EXCHANGE,  
TEST METHODS, DISTILLATION, SOLVENT EXTRACTION, PORTABLE  
EQUIPMENT, SULFATES (U)

THIS REPORT DOCUMENTS THE ENGINEERING DESIGN  
STUDY PHASE OF AN OVERALL EFFORT TO DEVELOP AND  
TEST A PROTOTYPE WASTEWATER TREATMENT SYSTEM FOR  
RENOVATING A COMBINED ADVANCED MILITARY BASE  
WASTEWATER CONSISTING OF KITCHEN, LAUNDRY, AND SHOWER  
WATERS FOR REUSE PURPOSES OTHER THAN DRINKING AND  
FOOD PREPARATION. THE OBJECTIVE OF THIS PHASE WITH  
RESPECT TO THE OVERALL EFFORT WAS TO DEVELOP A NUMBER  
OF INTEGRATED WASTEWATER TREATMENT SYSTEMS WHICH MAY  
BE USED TO TREAT SATISFACTORILY THE COMBINED RAW  
WASTEWATER. THE WORK PERFORMED DURING THIS PHASE  
CONSISTED OF A LITERATURE SURVEY, A LABORATORY  
INVESTIGATION, AND AN ENGINEERING DESIGN EVALUATION.  
THE LITERATURE SURVEY WAS CONDUCTED TO EVALUATE  
EXISTING INDIVIDUAL WASTE TREATMENT PROCESSES WHICH  
MAY BE APPLICABLE IN RENDERING THE COMBINED  
WASTEWATER IN QUESTION AMENABLE TO THE REQUIRED  
TREATMENT. THE LABORATORY INVESTIGATION WAS  
PERFORMED ON A SYNTHETIC WASTEWATER TO DETERMINE  
PROCESS APPLICABILITY AND TO DEMONSTRATE THE  
FEASIBILITY OF THE MOST PROMISING TREATMENT SYSTEMS  
UNCOVERED IN THE LITERATURE SURVEY. THE  
ENGINEERING DESIGN EVALUATION WAS CARRIED OUT TO  
DESIGN AND EVALUATE A NUMBER OF PROTOTYPE INTEGRATED  
WASTEWATER TREATMENT SYSTEMS USING THE DATA OBTAINED  
FROM THE LABORATORY INVESTIGATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 86U 067 13/2  
AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX

SUMMARY OF COMMERCIAL WASTE WATER TREATMENT  
PLANTS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 1 JAN-15 AUG 69,  
SEP 69 60P MAHONEY, JAMES A. ;  
REPT. NO. AFWL-TR-69-121

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR FORCE, \*SANITARY ENGINEERING),  
(\*SEWAGE, PROCESSING), LIMITED WAR, REVIEWS, CATALOGS,  
PERFORMANCE(ENGINEERING), COSTS, CONSTRUCTION, DESIGN,  
PREFABRICATED BUILDINGS (U)

IDENTIFIERS: ACTIVATED SLUDGE PROCESS, AERATION,  
BIOCHEMICAL OXYGEN DEMAND, MANUFACTURING,  
TRANSPORTABLE, UTILIZATION, WASTE WATER (U)

THE PURPOSE OF THE REPORT IS TO CATALOG AND REVIEW  
CAPABILITIES OF COMMERCIALLY AVAILABLE PACKAGED WASTE  
WATER TREATMENT PLANTS FOR POSSIBLE AIR FORCE  
APPLICATION IN LIMITED WAR AND FIXED BASE  
INSTALLATIONS. DEFINITIONS OF THE VARIOUS METHODS  
OF TREATMENT ARE INCLUDED. SIMPLE CURVES ARE  
FURNISHED FOR A QUICK ESTIMATE OF COSTS, POWER  
REQUIREMENTS, ERECTION TIME, SHIPPING VOLUME AND  
WEIGHT IN RELATION TO FLOW CAPACITY. INCLUDED ARE  
TABLES WHICH RELATE THE PERFORMANCES OF A NUMBER OF  
PLANTS TESTED BY THE NATIONAL SANITATION  
FOUNDATION, BY THE MANUFACTURER, AND BY THE  
FLORIDA STATE BOARD OF HEALTH. A LIST OF  
FIRMS WHICH MANUFACTURE PACKAGED WASTE WATER  
TREATMENT PLANTS IS INCLUDED IN AN APPENDIX.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 888 864 13/2  
AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX

SOLID WASTE PRACTICES IN THE UNITED STATES  
AIR FORCE.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 1 JUL 70-15 JUN 71,  
OCT 71 94P ROTHMAN, TORSTEN ;BERES,  
JOSEPH J. ;  
REPT. NO. AFWL-TR-71-119  
PROJ: AF-683MCC

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MILITARY FACILITIES, \*SANITARY  
ENGINEERING), QUESTIONNAIRES, DISPOSAL, GREASES,  
GARBAGE, SEWAGE, PATHOLOGY, WASTES(INDUSTRIAL),  
HERBICIDES, PESTICIDES, EROSION, SEDIMENTATION (U)  
IDENTIFIERS: EARTH FILLS, \*LIQUID WASTE DISPOSAL,  
REFUSE DISPOSAL, SANITARY LANDFILLS, \*SOLID WASTE  
DISPOSAL, WASTE DISPOSAL (U)

A QUESTIONNAIRE SURVEY OF AIR FORCE SOLID WASTE  
PRACTICES WAS CONDUCTED ON ALL ACTIVE AIR FORCE  
INSTALLATIONS. INFORMATION IS PRESENTED ON 98  
MAJOR INSTALLATIONS IN THE ZONE OF INTERIOR (ZI) IN  
THE FOLLOWING AREAS: BASE AND FAMILY HOUSING SOLID  
WASTES; GREASE DISPOSAL; GARBAGE GRINDERS; SOLID  
WASTES GENERATED IN SEWAGE TREATMENT; PATHOLOGICAL  
AND CLASSIFIED WASTES; LIQUID INDUSTRIAL WASTES, FIRE  
FIGHTING TRAINING, HERBICIDES AND PESTICIDES, ON-BASE  
LANDFILL OPERATIONS; AND SEDIMENTATION FROM EROSION.  
(AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 889 763 21/9.2 21/9.1 13/12  
JOHNS HOPKINS UNIV SILVER SPRING MD CHEMICAL PROPULSION  
INFORMATION AGENCY

CHEMICAL ROCKET/PROPELLANT HAZARDS. VOLUME  
I. GENERAL SAFETY ENGINEERING DESIGN  
CRITERIA.

(U)

OCT 71 253P JENSEN, ANDREAS V. ;  
REPT. NO. CPIA-PUB-194-VOL-1  
CONTRACT: N00017-72-C-4401

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-870  
258L.

DESCRIPTORS: (\*SOLID ROCKET PROPELLANTS, SAFETY),  
(\*LIQUID ROCKET PROPELLANTS, HAZARDS), INSTRUCTION  
MANUALS, FIRE SAFETY, EXPLOSION EFFECTS, TRANSPORTATION,  
STORAGE, DAMAGE ASSESSMENT, HANDLING, PROCESSING, BLAST,  
PROTECTION, ACOUSTICS, TOXICITY, DISPOSAL,  
DECONTAMINATION, SOUND, EXPLOSIONS, FIRES,  
FRAGMENTATION, STRUCTURES, COMPATIBILITY, SENSITIVITY,  
WASTES(INDUSTRIAL) (U)  
IDENTIFIERS: JOINT MILITARY ACTIVITIES (U)

THIS JOINT ARMY, NAVY, NASA, AIR FORCE  
MANUAL PROVIDES GENERAL GUIDANCE SAFETY CRITERIA,  
PROCEDURES, INSTRUCTIONS, PRECAUTIONS, AND RELATED  
TECHNICAL INFORMATION AS ASSISTANCE TO THOSE PERSONS  
RESPONSIBLE FOR MINIMIZING THE HAZARDS ASSOCIATED  
WITH THE OPERATION OF PROPELLANT HANDLING AND MOTOR  
AND ENGINE TEST FACILITIES BY THE SERVICES OR NASA.  
SEVEN CHAPTERS COVER THE FACILITY ASPECTS OF  
PLANNING A SAFE OPERATION IRRESPECTIVE OF THE  
PARTICULAR PROPELLANT INVOLVED. USEFUL GUIDELINES  
ARE GIVEN FOR CONTROLLING OR MINIMIZING TOXICITY,  
FIRE, AND EXPLOSION HAZARDS. EXTENSIVE COVERAGE FOR  
BLAST HAZARDS INCLUDES NOMOGRAPHS FOR ESTIMATING  
BLAST OVERPRESSURES, PROVIDING THAT TNT EQUIVALENCE  
(AND GEOMETRY) CAN BE SHOWN FOR THE DESIRED  
SYSTEM. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 912 712 1971 6/6  
NAVAL AMMUNITION DEPOT CRANE IND QUALITY EVALUATION AND  
ENGINEERING LAB

EXPLOSIVES AND THE ENVIRONMENT. (U)

JUN 73 37P  
REPT. NO. QEEL/C-73-217

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXPLOSIVES, WASTES(INDUSTRIAL)), (\*TNT,  
ENVIRONMENT), AIR POLLUTION, WATER POLLUTION,  
DEGRADATION, DUST, SOILS, DISPOSAL, EXHAUST GASES,  
COLORING, WATER, FISHES, TOXICITY, DOSAGE, SANITARY  
ENGINEERING, MICROORGANISMS, FUNGI, CULTURE MEDIA,  
DECOMPOSITION, HAZARDS, CHEMICAL ANALYSIS, INDIANA (U)  
IDENTIFIERS: BIODEGRADATION, CULTURES(BIOLOGY),  
ENVIRONMENTAL MANAGEMENT, SEWAGE TREATMENT (U)

THIS REPORT RELATES THE STUDIES THAT THE NAVAL  
AMMUNITION DEPOT AT CRANE, INDIANA, IS  
PREPARED TO DO AND THOSE THEY HAVE DONE IN RELATION  
TO AIR, WATER AND ENVIRONMENTAL POLLUTION. CRANE IS  
ONE OF THE SITES FOR THE NAVY ENVIRONMENTAL  
PROTECTION DATA BASE PROJECT. THE EMPHASIS  
IN THE REPORT IS ON TNT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 914 002 19/1 13/2  
PICATINNY ARSENAL DOVER N J

ABATEMENT OF HIGH NITRATE CONCENTRATIONS AT  
MUNITION PLANTS: A STATE OF THE ART  
REVIEW.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
AUG 73 70P HARRIS,LYNNE R. ;  
REPT. NO. PA-TR-4568  
PROJ: DA-54114

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXPLOSIVES, WATER POLLUTION), (\*WATER  
POLLUTION, NITRATES), (\*NITRATES, WASTES(INDUSTRIAL)),  
COUNTERMEASURES, BACTERIA, ALGAE, DECOMPOSITION, ION  
EXCHANGE, ELECTRODIALYSIS, REDUCTION(CHEMISTRY),  
OSMOSIS, DISTILLATION, ENVIRONMENT, WATER SUPPLIES,  
CHEMICAL ENGINEERING, COSTS, MUNITIONS INDUSTRY (U)  
IDENTIFIERS: REVERSE OSMOSIS, DENITRIFICATION,  
BIODEGRADATION, ABATEMENT, POLLUTION, ENVIRONMENTAL  
MANAGEMENT (U)

IN THE PRODUCTION OF EXPLOSIVES AND PROPELLANTS AT  
THE ARMY'S MUNITION PLANTS, LARGE QUANTITIES OF  
NITRATES ARE GENERATED AS SPENT ACID AND EVENTUALLY  
FIND THEIR WAY INTO THE PLANT'S SURROUNDING WATER  
BODIES. THIS REPORT REVIEWS THE AVAILABLE ABATEMENT  
PROCESSES AND INVESTIGATIONS FOR HIGH NITRATE  
CONCENTRATIONS AND DISCUSSES THE PRESENT PICATINNY  
ARSENAL NITRATE ABATEMENT PROGRAM.  
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD- 915 496 13/2 13/10  
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER ANNAPOLIS  
MD

CHARACTERIZATION OF NONOILY WASTE WATER ON  
U.S. ARMY LCU 1561.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 73 28P VOISINET, THOMAS H. ;  
REPT. NO. NSRDC-28-737

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WASTE WATER, LANDING CRAFT),  
(\*LANDING CRAFT, \*SANITARY ENGINEERING),  
SHIPBOARD, TANKS, WATER TANKS, SAMPLING,  
PHYSICAL PROPERTIES, CHEMICAL PROPERTIES,  
BACTERIA, CHEMICAL ANALYSIS, SEWAGE, LIQUIDS,  
WATER POLLUTION, NAVAL SHORE FACILITIES, SEWAGE  
TREATMENT, WASTES(SANITARY ENGINEERING),  
COLLECTION  
IDENTIFIERS: HOLDING TANKS, SHORE COLLECTION  
UNITS, LCU 1561 VESSEL

(U)

(U)

THE NONOILY LIQUID WASTES (OTHER THAN BILGE AND  
BALLAST WASTE WATER) GENERATED ABOARD U.S.  
ARMY LCU 1561, DURING ITS NORMAL DEPLOYMENT, WERE  
CHARACTERIZED. WASTE GENERATION RATES, AS WELL AS  
THE PHYSICAL, CHEMICAL, AND BACTERIOLOGICAL NATURE OF  
THE COLLECTED WASTE WATER, WERE DETERMINED. TWENTY-  
THREE GRAB SAMPLES, REPRESENTING THE WASTE WATER IN  
THE PORT AND STARBOARD HOLDING TANKS, WERE COLLECTED  
AND ANALYZED. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-ADDD 895 13/2  
LITTLE (ARTHUR D) INC CAMBRIDGE MASS

IDENTIFICATION OF OBJECTIONABLE ENVIRONMENTAL  
CONDITIONS AND ISSUES ASSOCIATED WITH  
CONFINED DISPOSAL AREAS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
SEP 74 212P HARRISON, JOAN E. ; CHISHOLM,  
LAURIE C. ;  
CONTRACT: DACW39-73-C-0130  
MONITOR: AEWES CR-D-74-4

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON DREDGED MATERIAL  
RESEARCH PROGRAM.

DESCRIPTORS: \*SOLID WASTES, \*WASTE DISPOSAL,  
\*COASTAL REGIONS, ECOLOGY, MARINE BIOLOGY,  
CHANNELS(WATERWAYS), ODORS, OCEAN CURRENTS,  
EROSION, WATER POLLUTION, TURBIDITY (U)  
IDENTIFIERS: \*DREDGE SPOIL, DIKES,  
LAGOONS(PONDS), ODOR POLLUTION, LAND USE (U)

OBJECTIONABLE CONDITIONS ASSOCIATED WITH CONFINED  
DISPOSAL OF DREDGED MATERIAL WERE STUDIED THROUGH ON-  
SITE INVESTIGATIONS OF FOUR U.S. ARMY  
ENGINEER DISTRICTS, AND DISCUSSIONS WITH CORPS  
PERSONNEL IN TEN OTHER DISTRICTS. THREE GENERAL  
CONCLUSIONS WERE REACHED: (1) TECHNIQUES ARE  
AVAILABLE FOR THE PREVENTION OF SOME OBJECTIONABLE  
CONDITIONS ASSOCIATED WITH THE EFFECTIVENESS OF  
CONFINED DISPOSAL AREAS; (2) FURTHER STUDY IS  
NEEDED AT THIS TIME TO DEFINE THE EXTENT AND  
SIGNIFICANCE OF MOST OBJECTIONABLE CONDITIONS  
ASSOCIATED WITH BIOLOGICAL, CHEMICAL, AND PHYSICAL  
CHANGES CAUSED BY DISPOSAL AREAS; (3)  
ECOLOGICAL AND LAND-USE ISSUES THAT ARE THE BASIS  
FOR PUBLIC OPPOSITION TO CONFINED DISPOSAL AREAS  
SHOULD BE INVESTIGATED FOR WAYS IN WHICH THE CORPS  
CAN MITIGATE THESE EFFECTS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A001 537 13/2 6/6  
EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

PRELIMINARY ENVIRONMENTAL SURVEY, NEWPORT  
ARMY AMMUNITION PLANT, NEWPORT, INDIANA,  
JANUARY 1973. (U)

DESCRIPTIVE NOTE: SPECIAL PUBLICATION,  
OCT 74 65P PEARSON, J. GARRETH ; STILES,  
DAVID A. ; BENDER, EDWARD S. ; GIBSON, JONATHAN  
S. ;  
REPT. NO. EB-SP-74010  
PROJ: PEMA-5734

UNCLASSIFIED REPORT

DESCRIPTORS: \*ENVIRONMENTAL PROTECTION, \*POLLUTION,  
\*ECOLOGY, INDIANA, INSTALLATION, WATER  
POLLUTION, AIR POLLUTION, WATER QUALITY,  
INDUSTRIAL PLANTS, WASTES (INDUSTRIAL),  
AMMUNITION, MILITARY FACILITIES, WATER TREATMENT,  
NATURAL RESOURCES (U)  
IDENTIFIERS: NEWPORT AMMUNITION PLANT,  
NEWPORT (INDIANA) (U)

THE INFORMATION COMPILED IN THE REPORT WAS USED TO  
DESIGN AND INTERPRET RESULTS FROM AN ECOLOGICAL  
SURVEY INITIATED AT NEWPORT ARMY AMMUNITION  
PLANT, NEWPORT, INDIANA. THIS PROGRAM WAS  
INITIATED IN NOVEMBER 1972 TO BIOLOGICALLY ASSESS  
THE EFFECTS OF INSTALLATION OPERATION AT NEWPORT  
ARMY AMMUNITION PLANT. THIS REPORT CONTAINS  
BACKGROUND INFORMATION ON THE NATURE OF NEWPORT  
ARMY AMMUNITION PLANT AND THE SURROUNDING  
COUNTY, THE NATURAL RESOURCES AT THE INSTALLATION,  
AND ACTUAL OR POTENTIAL ENVIRONMENTAL IMPACT ON THESE  
RESOURCES FROM OPERATIONS AT NEWPORT ARMY  
AMMUNITION PLANT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A003 212 13/2  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX

WATER POLLUTION SURVEY, MOODY AFB,  
GA.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
NOV 74 121P VIROST, RICHARD A. ;  
REPT. NO. EHL(K)-74-27

UNCLASSIFIED REPORT

DESCRIPTORS: \*WATER POLLUTION, \*SEWAGE TREATMENT,  
\*MILITARY FACILITIES, WASTES(INDUSTRIAL),  
FILTRATION, WASTE WATER, CHLORINATION, SAMPLING,  
ENVIRONMENTAL PROTECTION, WATER QUALITY, STORMS,  
OXYGEN, STREAMS, GEORGIA

(U)

IDENTIFIERS: \*MOODY AIR FORCE BASE, BEATTY  
CREEK, DISSOLVED OXYGEN, WATER QUALITY DATA,  
TRICKLING FILTERS, RECEIVING WATERS, STORM  
SEWERS

(U)

THE REPORT CONTAINS RESULTS OF A WASTEWATER SURVEY  
OF MOODY AFB GA PLANNED BY A BIOENVIRONMENTAL  
ENGINEER OF THE USAF ENVIRONMENTAL HEALTH  
LABORATORY, KELLY AFB TX AND CONDUCTED BY  
PERSONNEL OF MOODY AFB. ANALYSIS OF THE  
MOODY SEWAGE TREATMENT PLANT OPERATING LOGS FOR THE  
PERIOD JANUARY-NOVEMBER 1973 IS ALSO INCLUDED.  
THE MOODY AFB SEWAGE TREATMENT PLANT IS A WELL-  
RUN LOW-RATE TRICKLING FILTER PLANT, DESIGNED FOR  
0.75 MGD. THE PLANT PROVIDES EXCELLENT SECONDARY  
TREATMENT TO 0.393 MGD OF MEDIUM STRENGTH SEWAGE.  
THE EFFLUENT IS CHLORINATED BEFORE DISCHARGE TO  
BEATTY CREEK. SOME INDUSTRIAL WASTEWATERS  
IDENTIFIED IN THE REPORT ARE DISCHARGED DIRECTLY TO  
THE STORM SEWER SYSTEM. CONNECTION OF THESE WASTE  
STREAMS TO THE SANITARY SYSTEM SHOULD BE COMPLETED BY  
THE END OF FY 75 OR THE BEGINNING OF FY 76.  
THE BASE HAS RECEIVED ITS FINAL NPDES PERMIT.  
THE SEWAGE TREATMENT PLANT CAN COMPLY WITH THE  
INTERIM DISCHARGE REQUIREMENTS OF THE PERMIT, BUT IT  
WILL REQUIRE MODIFICATIONS TO MEET THE FINAL LIMITS  
THAT WILL APPLY BEGINNING ON 1 JULY 1977.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A006 394 7/1 13/2  
THICKOL CORP BRIGHAM CITY UTAH WASATCH DIV

THE TREATMENT AND ANALYSIS OF CYANIDE  
WASTEWATER.

(U)

DESCRIPTIVE NOTE: FINAL REPT. SEP 73-DEC 74,  
FEB 75 122P CLARK, D. P. ; POULTER, L.  
W. ; WILSON, O. W. ; CHRISTENSON, W. N. ;  
CONTRACT: F08638-74-C-0001  
PROJ: AF-2054  
TASK: 205403  
MONITOR: AFCEC TR-74-5

UNCLASSIFIED REPORT

DESCRIPTORS: \*CYANIDES, \*CHLORINATION,  
ELECTROPLATING, WATER POLLUTION, PROTOTYPES,  
CHEMICAL ANALYSIS, TEST METHODS, WASTE TREATMENT,  
ELECTROLYSIS, ELECTROCHEMISTRY, PILOT PLANTS,  
PERFORMANCE(ENGINEERING)

(U)

IDENTIFIERS: \*INDUSTRIAL WASTE TREATMENT, \*WATER  
POLLUTION CONTROL, WATER ANALYSIS

(U)

THE REPORT CONCERNS THE TREATMENT OF INDUSTRIAL  
WASTES CONTAINING CYANIDES, ESPECIALLY WASTES FROM  
ELECTROPLATING PROCESSES. THE PROTOTYPE SYSTEM  
TREATMENT CONCEPT IS ESSENTIALLY CHLORINATION VIA  
ELECTROLYTIC GENERATION OF CHLORINE IN THE WASTE  
WATER. DESIGN AND OPERATING ASPECTS ARE DISCUSSED.  
OTHER CYANIDE TREATMENT PROCESSES ARE REVIEWED AND  
ANALYTICAL TECHNIQUES ARE DISCUSSED.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD-A006 551 13/2 2/3 6/6  
CALIFORNIA UNIV BERKELEY SANITARY ENGINEERING RESEARCH  
LAB

AN EVALUATION OF THE ACCUMULATION,  
TRANSLOCATION, AND DEGRADATION OF PESTICIDES AT  
LAND WASTEWATER DISPOSAL SITES. (U)

DESCRIPTIVE NOTE: FINAL REPT. 15 MAY 73-31 AUG 74,  
NOV 74 235P KLEIN,STEPHEN A. ;JENKINS,  
DAVID ;WAGNET,R. J. ;BIGGAR,JAMES W. ;  
YANG,MING-SHYONG ;  
REPT. NO. SERL-74-4  
CONTRACT: DADA17-73-C-3109

UNCLASSIFIED REPORT

DESCRIPTORS: \*WATER POLLUTION, \*PESTICIDES,  
\*IRRIGATION SYSTEMS, WASTE DISPOSAL, DISLOCATIONS,  
WASTE WATER, SOILS, BIODETERIORATION,  
INSECTICIDES, OXIDATION, RAINFALL, TRANSPORT,  
ORGANIC PHOSPHORUS COMPOUNDS, CARBAMATES, AROMATIC  
COMPOUNDS, CHLORINE COMPOUNDS (U)  
IDENTIFIERS: \*PATH OF POLLUTANTS, MALATHION,  
CARBARYL, DIAZINON, PHOSPHORODITHIOATES,  
PHOSPHOROTHIOATES, D 2-4 HERBICIDE, ACETIC ACID/  
2-4-DICHLOROPHENOXY, \*SEWAGE IRRIGATION (U)

THE PURPOSE OF THE INVESTIGATION WAS TO DETERMINE  
THE FATE OF MALATHION, CARBARYL, DIAZINON, AND  
2,4-D BUTOXYETHYL ESTER DURING SEWAGE SPRAY  
IRRIGATION AT LAND DISPOSAL SITES. BIOCIDES  
ACCUMULATION AND DEGRADATION IN SOIL AND  
TRANSLOCATION IN SOIL AND WATER WAS ASSESSED.  
SHELTERED SOIL LYSIMETERS WERE SPRAY IRRIGATED  
THRICE WEEKLY AT A LOADING RATE OF 2 IN. PER WEEK  
WITH WASTEWATERS CONTAINING 0.1 MG/L OF EACH BIOCIDES.  
FIVE SOILS RANGING IN TYPE FROM FINELY TEXTURED TO  
COARSELY TEXTURED WERE EXAMINED AND TWO OF THESE  
SOILS WERE ALSO STUDIED IN FIELD PLOTS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A007 313 13/2 21/4 21/7  
TRANSPORTATION SYSTEMS CENTER CAMBRIDGE MASS

LUBRICATING OIL BURN-OFF IN COAST GUARD  
POWER PLANTS, (U)

FEB 75 97P HOBBS, J. R. ; WALTER, R.  
A. ;  
REPT. NO. TSC-USCG-74-6  
MONITOR: USCG D-80-75

UNCLASSIFIED REPORT

DESCRIPTORS: \*WASTE DISPOSAL, \*LUBRICATING OILS,  
\*COMBUSTION, COMBUSTION DEPOSITS, DIESEL FUELS,  
BOILERS, GAS TURBINES, DIESEL ENGINES,  
SEPARATION, ELECTRIC POWER PLANTS, AIR POLLUTION,  
COSTS (U)  
IDENTIFIERS: \*LIQUID WASTE DISPOSAL, INDUSTRIAL  
WASTE TREATMENT (U)

THE RESULTS OF A FEASIBILITY STUDY FOR THE BURN-OFF  
OF WASTE OILS IN COAST GUARD POWER PLANTS ARE  
PRESENTED. AMONG THE FACTORS CONSIDERED IN THIS  
EVALUATION WERE: SIMPLICITY, COST, ENGINE  
MANUFACTURERS RECOMMENDATIONS, MIXING RATIOS, ENGINE  
EMISSIONS, AND EFFECTS ON ENGINE PERFORMANCE.  
COMBUSTION IN DIESEL ENGINE, BOILERS, AND GAS  
TURBINES WAS INVESTIGATED. AS A RESULT OF THIS  
STUDY IT IS RECOMMENDED THAT WASTE OIL BE TREATED BY  
PROCEDURES OUTLINED IN THIS STUDY, BLENDED AT A MIX  
RATIO OF 1% OR LESS WASTE OIL TO DIESEL FUEL OIL,  
AND BURNED OFF IN COAST GUARD POWER PLANTS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A007 798 13/2 6/6  
EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

PRELIMINARY ENVIRONMENTAL SURVEY, PINE  
BLUFF ARSENAL, PINE BLUFF, ARKANSAS,  
DECEMBER 1972.

(U)

DESCRIPTIVE NOTE: SPECIAL PUB.,  
MAR 75 57P. PINKHAM, CARLOS F. A. ;  
PEARSON, J. GARETH ; FULLER, JOHN J. ; BENDER,  
EDWARD S. ;  
REPT. NO. EB-SP-74025

UNCLASSIFIED REPORT

DESCRIPTORS: \*WASTES(INDUSTRIAL), \*POLLUTION,  
\*MILITARY FACILITIES, \*ECOLOGY, AIR QUALITY,  
WATER QUALITY, NATURAL RESOURCES, AQUATIC ANIMALS,  
WILDLIFE, WATER SUPPLIES, INVERTEBRATES,  
PESTICIDES, FERTILIZERS, WASTE DISPOSAL,  
INCINERATORS, ARKANSAS  
IDENTIFIERS: \*ENVIRONMENTAL SURVEYS, ENVIRONMENTAL  
IMPACTS, \*PINE BLUFF ARSENAL

(U)

(U)

THE INFORMATION COMPILED IN THE REPORT WAS USED TO  
DESIGN AND INTERPRET RESULTS FROM AN ECOLOGICAL  
SURVEY INITIATED AT PINE BLUFF ARSENAL, PINE  
BLUFF, AK. THE PROGRAM WAS INITIATED IN  
NOVEMBER 1972 TO BIOLOGICALLY ASSESS THE EFFECTS OF  
INSTALLATION OPERATION AT PINE BLUFF ARSENAL.  
THE REPORT CONTAINS BACKGROUND INFORMATION ON THE  
NATURE OF PINE BLUFF ARSENAL AND THE  
SURROUNDING COUNTY, THEIR NATURAL RESOURCES, AND  
ACTUAL OR POTENTIAL ENVIRONMENTAL IMPACT ON THESE  
RESOURCES FROM OPERATIONS AT PINE BLUFF  
ARSENAL.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD-A007 889 13/2 11/8  
AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX

PRACTICAL FEASIBILITY EVALUATION OF  
COMBUSTING WASTE PETROLEUM OILS AND  
LUBRICANTS IN EXISTING HEATING PLANT  
BOILERS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 5 JAN-1 JUL 74,  
FEB 75 47P KROOP, RONALD H. ; ELKIN,  
HAROLD ;  
REPT. NO. AFWL-TR-74-171  
PROJ: AF-2103

UNCLASSIFIED REPORT

DESCRIPTORS: \*PETROLEUM PRODUCTS, \*OILS,  
\*LUBRICANTS, \*COMBUSTION, HEATING PLANTS, WASTE  
DISPOSAL, WASTES(INDUSTRIAL), BOILERS, COSTS,  
AIR POLLUTION, FEASIBILITY STUDIES, AIR FORCE  
FACILITIES

(U)

IDENTIFIERS: \*LIQUID WASTE DISPOSAL, ECONOMIC  
ANALYSIS, SEYMOUR-JOHNSON AIR FORCE BASE,  
LORING AIR FORCE BASE, MCCONNELL AIR  
FORCE BASE

(U)

RESEARCH HAS BEGUN TO EVALUATE THE PRACTICAL  
FEASIBILITY OF COMBUSTING WASTE PETROLEUM, OILS, AND  
LUBRICANTS (POL'S) IN EXISTING HEATING PLANT  
BOILERS AT THREE AIR FORCE BASES. THE THREE  
BASES ARE SEYMOUR-JOHNSON, LORING, AND  
MCCONNELL AFB. THIS REPORT DESCRIBES THE  
HEATING PLANTS AT THE THREE BASES, THE TYPES AND  
QUANTITIES OF WASTE POL'S GENERATED, AND THE WASTE  
POL TRANSFER SYSTEMS THAT WERE DESIGNED FOR EACH  
BASE. ECONOMIC ANALYSIS, AS REPORTED, INDICATES A  
DEFINITE AND SIGNIFICANT MONETARY SAVINGS THAT CAN BE  
REALIZED FROM REDUCED FUEL OIL AND/OR NATURAL GAS  
CONSUMPTION BY COMBUSTING WASTE POL'S AND TAKING  
ADVANTAGE OF THEIR HEATING VALUE. THE TEST PLAN  
FOR ACTUAL SEVERAL MONTH EVALUATION OF WASTE POL  
COMBUSTION AT THE THREE BASES IS DESCRIBED AND  
INCLUDES AIR POLLUTION SAMPLING AND IDENTIFICATION OF  
ANY OPERATIONAL PROBLEMS.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A008 332 13/2  
ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT CENTER  
FORT BELVOIR VA

STUDY ON POWER-LAUNDRY WASTEWATER  
TREATMENT.

(U)

DESCRIPTIVE NOTE: FINAL REPT. OCT 73-FEB 74,  
NOV 74 88P LENT, DANIEL S. ;  
REPT. NO. USAMERDC-2118  
PROJ: DA-1-G-763702-DK-39  
TASK: 1-G-763702-DK-3931

UNCLASSIFIED REPORT

DESCRIPTORS: •LAUNDRY OPERATIONS, •MILITARY  
FACILITIES, WASTES(INDUSTRIAL), ACTIVATED  
CARBON, DETERGENTS, METALS

(U)

IDENTIFIERS: SIC 7211, •INDUSTRIAL WASTE  
TREATMENT, •WATER POLLUTION CONTROL, ACTIVATED  
CARBON TREATMENT, POLYELECTROLYTES, HEAVY  
METALS

(U)

THIS REPORT DESCRIBES A FIELD STUDY OF THE  
TREATMENT OF LAUNDRY EFFLUENTS CONDUCTED AT THE SITE  
OF A POWER LAUNDRY (FAMILY AND COMMERCIAL TYPE,  
SIC 7211). THE PURPOSE OF THE STUDY WAS TO  
EVALUATE THE EFFECTIVENESS OF A PROCESS EMPLOYING  
POWDERED, ACTIVATED CARBON, A CATIONIC  
POLYELECTROLYTE, AND A MODIFIED, STANDARD MILITARY  
WATER-PURIFICATION UNIT (ERDLATOR) FOR THE  
TREATMENT OF WASTEWATERS FROM POWER-LAUNDRY  
OPERATIONS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A008 370 13/2  
ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG  
MISS

WASTEWATER TREATMENT ON SOILS OF LOW  
PERMEABILITY.

(U)

DESCRIPTIVE NOTE: INTERIM REPT. JUL 72-JUN 73,  
JUL 74 118P HOEPEL, RONALD E. ; HUNT,  
PATRICK G. ; DELANEY, THOMAS B. , JR;  
REPT. NO. AEWES-MISC-PAPER-Y-74-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*SEWAGE TREATMENT, \*SOILS, \*FOOD  
PROCESSING, NITRATES, CHEMICAL REACTIONS, WASTE  
WATER, PURIFICATION, REMOVAL, INORGANIC COMPOUNDS,  
CANNING, WASTES(INDUSTRIAL), PERMEABILITY,  
MODEL TESTS

(U)

IDENTIFIERS: OVERLAND FLOW, \*SEWAGE IRRIGATION,  
NITRIFICATION, DENITRIFICATION, INDUSTRIAL WASTE  
TREATMENT

(U)

THE STUDY WAS LIMITED TO LAND TREATMENT AS A MEANS  
OF ACHIEVING ADVANCED WASTEWATER PURIFICATION.  
LAND TREATMENT HAS THE ADVANTAGE OF INCORPORATING  
THE RECYCLING CONCEPT DIRECTLY INTO ITS TREATMENT  
MODE, RESULTING IN REPLACEMENT RATHER THAN DEPLETION  
OF NATURAL RESOURCES. ALSO, SOME FORM OF CONTROL  
OVER ECOLOGICALLY DAMAGING COMPONENTS IS RETAINED.  
THIS REPORT PRESENTS RESULTS OF A LITERATURE REVIEW  
ON VARIOUS METHODS OF TREATING WASTEWATER ON LAND AND  
ALSO PRESENTS RESULTS OF MODEL TESTS OF THE OVERLAND  
FLOW METHOD, WITH PARTICULAR EMPHASIS ON  
NITRIFICATION AND DENITRIFICATION. TWO TYPES OF  
SOIL SYSTEMS FOR OVERLAND FLOW TREATMENT OF  
WASTEWATER WERE INVESTIGATED DURING THESE MODEL  
TESTS. ONE SOIL WAS FROM AN 8-YEAR-OLD COMMERCIAL  
CANNERY WASTEWATER TREATMENT SITE. THE OTHER WAS  
FROM AN UNTREATED NATURAL SITE IN A NATIONAL FOREST  
THAT WAS LOW IN INDIGENOUS SOIL ORGANIC MATTER;  
CONSEQUENTLY, THIS LATTER SYSTEM WAS AMENDED WITH  
SLUDGE IN ORDER TO INCREASE ITS ORGANIC MATTER  
CONTENT. THUS, BOTH EXPERIMENTAL SOILS REPRESENTED  
SOIL SYSTEMS THAT HAD MORE ORGANIC MATTER AND  
BIOLOGICAL ACTIVITY THAN AN AVERAGE HEAVY CLAY SOIL. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A008 962 7/1 13/2 19/1  
ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT CENTER  
FORT BELVOIR VA

THE FEASIBILITY OF CONCENTRATING/SEPARATING  
DILUTE NITROCELLULOSE ACID WASTEWATERS BY  
REVERSE OSMOSIS.

(U)

DESCRIPTIVE NOTE: INTERIM REPT. AUG 72-JUN 74,  
NOV 74 48P CICCONE, VINCENT J. ;  
REPT. NO. USAMERDC-2119  
PROJ: PRON-GG-325205-01-GG-EF

UNCLASSIFIED REPORT

DESCRIPTORS: \*REVERSE OSMOSIS, \*NITROCELLULOSE,  
CHEMICAL INDUSTRY, COMPUTER PROGRAMS, MEMBRANES,  
CELLULOSE ACETATES, WASTE TREATMENT,  
WASTES(INDUSTRIAL),  
PERFORMANCE(ENGINEERING), CORROSION,  
SEPARATION, CONCENTRATION(CHEMISTRY),  
MANUFACTURING, NITRATES, SULFATES  
IDENTIFIERS: \*INDUSTRIAL WASTE TREATMENT, \*WATER  
POLLUTION CONTROL, MATERIALS RECOVERY,  
POLYPHENYLENE OXIDE

(U)

(U)

THIS FEASIBILITY STUDY FOCUSED ON THE APPLICATION  
OF MEMBRANE TECHNOLOGY FOR THE CONCENTRATION AND/OR  
SEPARATION OF DILUTE ACID WASTEWATERS. PRELIMINARY  
LABORATORY INVESTIGATIONS USING COMMERCIALY  
AVAILABLE CELLULOSE-ACETATE REVERSE OSMOSIS (RO)  
MEMBRANES WERE CONDUCTED. THE OBJECTIVE OF THIS  
STUDY WAS TO CONCENTRATE THE DILUTE ACIDS AS A UNIT  
PROCESS TOWARD ABATING THE NITRATE POLLUTION PROBLEM  
OR AS AN INTERMEDIATE STEP IN THE RECOVERY OF THE  
NITRIC AND SULPHURIC ACIDS. RESULTS OF THESE  
PRELIMINARY INVESTIGATIONS INDICATED THAT RO WAS A  
POTENTIAL CANDIDATE FOR LARGER SCALE APPLICATION AND,  
THEREFORE, MORE DETAILED WORK WAS WARRANTED. OF  
SPECIAL INTEREST WAS THE DEVELOPMENT OF AN ACID-  
RESISTANT MEMBRANE TO COUNTER THE SUSCEPTIBILITY OF  
CELLULOSE-ACETATE TO HYDROLYSIS WHEN CONTINUOUSLY  
EXPOSED IN AN ACIDIC ENVIRONMENT. THE APPLICATION  
OF CELLULOSE-ACETATE AND MODIFIED SULFONATED  
POLYPHENYLENE OXIDE RO MEMBRANES AS A UNIT PROCESS  
IN THE TREATMENT OF DILUTE ACID WASTEWATERS GENERATED  
AT THE NITROCELLULOSE MANUFACTURING PLANT IS  
TECHNICALLY FEASIBLE. ACIDIC CORROSION OF THE  
METALLIC COMPONENTS OF THE RO SYSTEM CAN INTRODUCE  
OPERATIONAL PROBLEMS THAT WILL SIGNIFICANTLY  
INTERFERE WITH THE REJECTION AND FLUX RATES

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-AD10 429 13/2 15/5  
COMBUSTION POWER CO INC MENLO PARK CALIF

LSW-500 DISPOSAL OF AIR FORCE LIQUID  
WASTES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. APR 73-JUN 74,  
APR 75 143P  
CONTRACT: F29601-73-C-0126  
PROJ: AF-683-M, AF-2103  
MONITOR: AFWL TR-74-70

UNCLASSIFIED REPORT

DESCRIPTORS: \*LIQUID WASTES, \*WASTE DISPOSAL,  
\*MILITARY FACILITIES, \*INCINERATORS, FLUIDIZED BED  
PROCESSES, SOLID WASTES, COMBUSTION, FEASIBILITY  
STUDIES, SEWAGE DISPOSAL, GARBAGE DISPOSAL,  
HERBICIDES, LUBRICANTS, OILS, PAINT REMOVERS,  
THERMAL DEGRADATION, FUELS, AIR POLLUTION  
IDENTIFIERS: \*LIQUID WASTE DISPOSAL, SOLID WASTE  
DISPOSAL, OIL WASTES, SLUDGE DISPOSAL, HEAT  
RECOVERY, AIR POLLUTION CONTROL EQUIPMENT

(U)

(U)

PRESENTED ARE THE RESULTS OF A FEASIBILITY  
INVESTIGATION ON THERMAL DEGRADATION OF SELECTED  
USAF LIQUID WASTES IN A FLUIDIZED BED INCINERATION  
SYSTEM. AIRCRAFT WASHRACK WASTES, PAINT STRIPPING  
WASTES, HERBICIDE ORANGE, PETROLEUM, OIL AND  
LUBRICANT WASTES (POL), MUNICIPAL GARBAGE AND  
SEWAGE SLUDGE WERE USED FOR TESTING IN COMBUSTION  
POWER COMPANY'S 3-FOOT DIAMETER (LSW-500)  
FLUID BED COMBUSTOR. RESULTS SHOW THAT WITH PROPER  
LIQUID WASTE INJECTION LOCATIONS AND PROCEDURES POL  
WASTES OR SHREDDED AND AIR CLASSIFIED MUNICIPAL  
GARBAGE CAN BE USED AS FUEL TO DISPOSE OF NON-FUEL  
LIQUID WASTES WITHOUT REQUIRING SUPPLEMENTAL FUEL.  
WHEN USING SOLID WASTE AS FUEL TO DISPOSE OF LIQUID  
WASTE OR WHEN USING LIMESTONE TO CONTROL HCL AN  
ADDITIONAL PARTICULATE EMISSION CONTROL DEVICE  
DOWNSTREAM OF THE FIRST AND SECOND STAGE INERTIAL  
SYSTEM WILL BE REQUIRED. COMBUSTION POWER  
COMPANY IS PRESENTLY DEVELOPING A DRY SCRUBBER FOR  
THIS PURPOSE.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A010 601 2/4  
PURDUE UNIV LAFAYETTE IND DEPT OF AGRONOMY

EVALUATING A MAGNESIUM-AMMONIUM PHOSPHATE  
SUSPENSION AS A FERTILIZER MATERIAL. (U)

DESCRIPTIVE NOTE: INTERIM REPT. MAR-OCT 74,  
DEC 74 29P HOOD, ELDON L. ;  
PROJ: SF57-572  
TASK: SF57-572-301  
MONITOR: NAD-CR RDTR-283

UNCLASSIFIED REPORT

DESCRIPTORS: \*FERTILIZERS, \*PHOSPHORUS,  
\*WASTES(INDUSTRIAL), \*PYROTECHNICS,  
PHOSPHATES, PLANT TISSUE, GROWTH(GENERAL),  
PLANTS(BOTANY), GRASSES, SOIL TESTS,  
EFFECTIVENESS, CORRELATION TECHNIQUES, WASTE  
DISPOSAL (U)  
IDENTIFIERS: \*SOLID WASTE DISPOSAL, MAGNESIUM  
AMMONIUM PHOSPHATES, EVALUATION (U)

OBJECTIVES OF THE STUDY WERE AS FOLLOWS: (1)  
COMPARE MAGNESIUM-AMMONIUM-PHOSPHATE (MAP) WITH A  
STANDARD GRANULAR FERTILIZER SUCH AS TRIPLE  
SUPERPHOSPHATE (TSP) FOR THEIR PLANT FEEDING  
PROPERTIES; (2) EVALUATE BOTH MATERIALS OVER A  
WIDE RANGE OF TREATMENT RATES; (3) OBSERVE THE  
CAPACITY OF THESE MATERIALS TO STIMULATE LEGUME  
SEEDLINGS IN AN ESTABLISHED GRASS SOD; (4)  
INVESTIGATE NUTRIENT UPTAKE BY THE GROWING CROP AS  
MEASURED BY PLANT TISSUE ANALYSES; AND, (5)  
EXAMINE CHANGES IN SOIL FERTILITY LEVELS AS  
AFFECTED BY RATE AND SOURCE OF PHOSPHORUS  
CARRIER. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A011 236 13/2  
ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT CENTER  
FORT BELVOIR VA

INVESTIGATING WASTE OIL DISPOSAL BY DIRECT  
INCINERATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
FEB 75 21P LEPARA, MAURICE E. ;  
DEBONO, GERALD ;  
REPT. NO. USAMERDC-2127  
PROJ: DA-1-T-662611-AH-69

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED JAN 74, AD-  
772 911.

DESCRIPTORS: \*FUEL OIL, \*OILS, \*INCINERATORS,  
\*WASTE DISPOSAL, AIR POLLUTION,  
WASTES(INDUSTRIAL), CRANKCASES, RECYCLED  
MATERIALS, SMOKE STACKS, MONITORING, COMBUSTION,  
TABLES(DATA)

(U)

IDENTIFIERS: \*OIL WASTES

(U)

A SECOND COMBUSTION-EMISSIONS TEST PROGRAM WAS  
CONDUCTED AT ABERDEEN PROVING GROUND,  
MARYLAND, TO ADDRESS THE FEASIBILITY FOR DISPOSAL  
OF WASTE OIL PRODUCTS BY DIRECT INCINERATION. A  
'REFEREE' WASTE OIL, COMPOSED PRIMARILY OF AUTOMOTIVE  
CRANKCASE DRAINS, WAS BLENDED INTO NO. 2 FUEL  
OIL AND COMBUSTED IN A BURNER-BOILER POWERPLANT  
LOCATED AT THE MESSEHALL FACILITY. DURING THIS  
STEADY-STATE COMBUSTION, THE STACK EMISSIONS WERE  
MONITORED BY THE U.S. ARMY ENVIRONMENTAL  
HYGIENE AGENCY TO DEFINE THE EFFECTS OF THE WASTE  
OIL FRACTION ON PARTICULATE EMISSION RATES. IT WAS  
NOTED THAT PARTICULATE EMISSIONS INCREASED  
SIGNIFICANTLY WITH THE ADDITION OF THE WASTE OIL  
COMPONENT, AND INDICATIONS WERE GIVEN THAT WASTE OIL  
STRATIFICATION COULD BE A PROBLEM.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A011 855 13/2 6/5  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

PRELIMINARY STUDIES OF ASBESTIFORM FIBERS IN  
DOMESTIC WATER SUPPLIES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 74 14P COOPER, ROBERT C. ; MURCHIO,  
JACK C. ;  
REPT. NO. AMRL-TR-74-125-PAPER-5  
PROJ: AF-6302  
TASK: 630201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
CALIFORNIA UNIV., BERKELEY.

DESCRIPTORS: \*WATER SUPPLIES, \*ASBESTOS, \*DRINKING  
WATER, \*PUBLIC HEALTH, FIBERS, CARCINOGENS,  
WASTES(INDUSTRIAL), WATER POLLUTION,  
CALIFORNIA, UNITED STATES, GROUND WATER,  
LAKES

(U)

IDENTIFIERS: POTABLE WATER, \*WATER POLLUTION  
EFFECTS(HUMANS), WATER ANALYSIS

(U)

THE AUTHORS REPORT UPON THE RESULTS OBTAINED IN THE  
ANALYSIS OF NUMEROUS DRINKING WATER SOURCES FOR  
ASBESTIFORM FIBERS IN THE UNITED STATES, WITH  
EMPHASIS ON NORTHERN CALIFORNIA. A TECHNIQUE  
FOR ASBESTOS ANALYSIS HAS BEEN DEVELOPED WHICH SEEMS  
TO COMPARE FAVORABLY WITH THE RESULTS OF OTHERS WHO  
ARE USING A SIMILAR METHODOLOGY. THE DEVELOPMENT  
OF AN ACCEPTABLE STANDARD METHOD OF ANALYSIS IS  
ESSENTIAL TO THE CONDUCT OF A RATIONAL  
EPIDEMIOLOGICAL ASSESSMENT OF THE IMPACT OF  
ASBESTIFORM FIBERS IN DRINKING WATER SUPPLIES UPON  
HUMAN HEALTH.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A013 433 13/2  
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

RESULTS OF R/V YAQUINA CRUISE YALOC-74,  
LEG 3: SEABED DISPOSAL PROGRAM, NORTH  
PACIFIC STUDY AREA MPG-2, 33 DEG. 20'N, 151  
DEG 00'W, NOV. 30-DEC. 21, 1974. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JUL 75 35P HEATH, G. ROSS ;  
CONTRACT: N00014-67-A-0369-0007  
MONITOR: COO 2689-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH RHODE  
ISLAND UNIV., KINGSTON. GRADUATE SCHOOL OF  
OCEANOGRAPHY, REPT. NO. REF-75-4.

DESCRIPTORS: \*WASTE DISPOSAL, \*RADIOACTIVE WASTES,  
\*NORTH PACIFIC OCEAN, BATHYMETRY, ACOUSTIC  
PROPERTIES, OCEAN BOTTOM TOPOGRAPHY, OCEAN CURRENTS,  
SEDIMENTS, UNDERWATER SOUND EQUIPMENT, CORES,  
GEOCHEMISTRY, RADIONUCLIDES, OCEAN BOTTOM  
SAMPLING, SEA WATER, OCEANOGRAPHIC SHIPS (U)  
IDENTIFIERS: YAQUINA VESSEL, \*OCEAN WASTE  
DISPOSAL, SUSPENDED SEDIMENTS (U)

DURING 10 DAYS IN THE VICINITY OF 33 DEG 20 MIN  
N, 151 DEG 00 MIN W (MPG-2 AREA), THREE NEAR-  
BOTTOM CURRENT METERS WERE DEPLOYED, THE BATHYMETRY  
AND SUB-BOTTOM ACOUSTIC STRUCTURE OF THE SURROUNDING  
SEAFLOOR WERE DETERMINED, AND SEDIMENT CORES WERE  
COLLECTED FOR STUDIES OF ARTIFICIAL RADIONUCLIDE  
DISTRIBUTION, GEOTECHNICAL PROPERTIES, GEOCHEMICAL  
PROPERTIES, AND TO IDENTIFY THE CHARACTER OF SHALLOW  
ACOUSTIC REFLECTORS. LARGE VOLUME WATER SAMPLES FOR  
ARTIFICIAL RADIONUCLIDE STUDIES AND SUSPENDED  
SEDIMENT WERE ALSO COLLECTED. THESE SAMPLES AND  
DATA WILL SUPPLEMENT EARLIER MATERIAL TO BE USED IN  
THE EVALUATION OF THE CENTRAL NORTH PACIFIC AS A  
POTENTIAL SITE FOR THE ULTIMATE DISPOSAL OF HIGH-  
LEVEL REACTOR WASTES. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A014 300 13/2 19/1 13/8  
ENVIRONMENTAL CONTROL TECHNOLOGY CORP ANN ARBOR MICH

AQUATIC FIELD SURVEY AT IOWA ARMY  
AMMUNITION PLANT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 75 152P WEITZEL, R. L. ; SIMON, P.  
B. ; JERGER, D. E. ; SCHENK, J. E. ;  
CONTRACT: DAMD17-74-C-4124

UNCLASSIFIED REPORT

DESCRIPTORS: •MUNITIONS INDUSTRY, •WATER POLLUTION,  
WASTES(INDUSTRIAL), SURVEYS, HIGH EXPLOSIVE  
AMMUNITION, WASTE DISPOSAL, WATER SUPPLIES,  
DRINKING WATER, MONITORING, POLLUTANTS, FIELD  
TESTS, BIODETERIORATION, QUANTITATIVE ANALYSIS,  
SAMPLING, COMMUNITY RELATIONS, SEDIMENTS,  
EUTROPHICATION, TNT, NITROGEN COMPOUNDS, RDX,  
HMX, POLLUTION, ABATEMENT, PHYTOPHTHORA,  
INDUSTRIAL PLANTS, AMMUNITION  
IDENTIFIERS: IOWA ARMY AMMUNITION PLANT

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FIELD COLLECTIONS WERE CONDUCTED DURING THE SUMMER  
PERIOD 12-24 AUGUST 1974. MATERIAL AND SPECIMENS  
WERE COLLECTED FOR SPECIES DIVERSITY AND  
DISTRIBUTION, CHEMICAL ANALYSIS OF WATER AND  
SEDIMENTS, AND BIOACCUMULATION AND BIODEGRADATION OF  
MUNITION COMPOUNDS. STATION LOCATIONS USED DURING  
THIS SURVEY WERE ESTABLISHED AFTER CONSIDERATION OF  
THE FOLLOWING: (1) THE PRESENT SAMPLING  
PROGRAM CONDUCTED BY PLANT PERSONNEL; (2) THE  
EFFLUENT LOCATIONS FROM VARIOUS OPERATION GROUPS  
OR LINES; AND (3) THE DATA RECEIVED THROUGH  
PAST REPORTS. THERE ARE APPROXIMATELY 21 MILES OF  
STREAM WITHIN THE PLANT BOUNDARIES WHICH ALSO  
INCLUDES TWO LAKES FORMED BY THE CONSTRUCTION OF  
DAMS. THREE STREAM SYSTEMS HAVE THEIR ORIGINS OR  
PASS THROUGH THE IAAP INSTALLATION. THESE INCLUDE  
LONG CREEK WHICH ORIGINATES, IN PART, OUTSIDE THE  
INSTALLATION BOUNDARY; BRUSH CREEK WHICH  
ORIGINATES WITHIN THE INSTALLATION; AND SPRING  
CREEK WHICH ALSO ORIGINATES, IN PART, OUTSIDE THE  
IAAP BOUNDARIES.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDM09

AD-A015 602 13/2 19/1  
ARMY NATICK DEVELOPMENT CENTER MASS

EXPLOSIVES REMOVAL FROM MUNITIONS  
WASTEWATERS,

(U)

75 27P STEVENS, B. W. ; MCDONNELL,  
R. P. ; ANDREN, R. K. ; NYSTROM, J. M. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE ANNUAL PURDUE  
INDUSTRIAL WASTE CONFERENCE (30TH), MAY 6-7-8,  
1975.

DESCRIPTORS: \*WASTES(INDUSTRIAL), \*EXPLOSIVES,  
WASTE TREATMENT, WATER POLLUTION, MEETINGS,  
STREAMS, ADSORBENTS, TNT, DNT, RDX, ION  
EXCHANGE RESINS, WASTE WATER, REMOVAL, EFFICIENCY,  
HMX, RECOVERY, ADSORPTION, MUNITIONS INDUSTRY,  
PILOT STUDIES

(U)

IDENTIFIERS: \*WATER POLLUTION CONTROL, IOWA  
AMMUNITION PLANT, INDUSTRIAL WASTE  
TREATMENT

(U)

PILOT PLANT STUDIES CONDUCTED AT THE IOWA  
AMMUNITION PLANT, BURLINGTON, IOWA, HAVE  
DEMONSTRATED A SAFE, PRACTICAL AND ECONOMICAL  
POLYMERIC ADSORPTION PROCESS FOR REMOVING  
TRINITROTOLUENE (TNT) AND OTHER HAZARDOUS EXPLOSIVE  
MATERIALS, SUCH AS DNT AND NITROCRESOLS, FROM WASTE  
STREAMS. THE LOADED ADSORBENT CAN BE REGENERATED  
WITH SOLVENT. TO MINIMIZE OPERATING COSTS, THE  
SOLVENT CAN BE EASILY RECOVERED FOR REUSE, LEAVING  
ONLY A CONCENTRATED AQUEOUS SLUDGE OF EXPLOSIVE  
CONTAMINANTS FOR ULTIMATE DISPOSAL. AS A RESULT OF  
THE SUCCESS OF THIS PILOT-SCALE STUDY, FULL-SCALE  
DEMONSTRATION INSTALLATIONS OF THE PROCESS ARE BEING  
PLANNED FOR SEVERAL ORDNANCE PLANTS IN THIS  
COUNTRY.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A016 118 13/2 2/3  
OFFICE OF THE CHIEF OF ENGINEERS (ARMY) WASHINGTON D C

AN EVALUATION OF LAND TREATMENT OF  
MUNICIPAL WASTEWATER AND PHYSICAL SITING OF  
FACILITY INSTALLATIONS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAY 75 80P HARTMAN, WILLIS J. , JR;

UNCLASSIFIED REPORT

DESCRIPTORS: •WASTE WATER, •SEWAGE DISPOSAL,  
IRRIGATION SYSTEMS, SOILS, WASTE DISPOSAL, WASTE  
WATER, LAND USE, SITE SELECTION, VEGETATION,  
MANAGEMENT PLANNING AND CONTROL, PUBLIC HEALTH  
IDENTIFIERS: •SEWAGE IRRIGATION, •LAND DISPOSAL,  
WASTE WATER REUSE

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THE MAIN PURPOSE OF THIS STUDY IS TO FAMILIARIZE  
POLICY AND DECISION MAKERS WITH THE LAND TREATMENT  
METHOD OF TREATING OR 'DISPOSING' MUNICIPAL  
WASTEWATER. AN ATTEMPT IS MADE TO PROVIDE  
PRELIMINARY GUIDANCE TO DESIGNERS FOR HOW AND WHERE  
THE FACILITY CAN BE SITED IN RELATION TO THE  
POPULATION SERVED. THE ENVIRONMENT CREATED WAS  
EVALUATED WITH EMPHASIS ON THAT ENVIRONMENT WHICH  
IMPACTS ON PEOPLE LIVING NEARBY. EVALUATIONS WERE  
MADE OF CHARACTERISTICS OF POTENTIAL AREAS AND AREAS  
CURRENTLY SERVED, SIZE OF POPULATION SERVED, SOILS,  
CROPS, HEALTH HAZARDS, AESTHETICS AND RATE AND  
QUANTITY OF APPLICATION. FACTORS WHICH AFFECT  
SITING ARE SET OUT FOR THE CONSIDERATION OF THE  
FACILITY DESIGNER. FOUR SITING TECHNIQUES  
(PLANNING GOALS) WERE ESTABLISHED; BUFFER AREA,  
ISOLATION, NATURAL RESOURCE PRESERVE AND FARM-  
MUNICIPALITY COOPERATIVE. LAND TREATMENT IS  
CERTAINLY A MOST WORTHY METHOD OF TREATING MUNICIPAL  
WASTEWATER FROM LARGE AS WELL AS SMALL POPULATIONS  
WHERE THE SOIL AND CLIMATIC CONDITIONS ARE FAVORABLE,  
AND THE FARMERS ECONOMIC SITUATION CAN BE IMPROVED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A016 128 6/13  
RHODE ISLAND UNIV KINGSTON DEPT OF PLANT PATHOLOGY-  
ENTOMOLOGY

BIODEGRADATION OF ALPHA TNT AND ITS  
PRODUCTION ISOMERS.

(U)

DESCRIPTIVE NOTE: INTERIM REPT. JUL 73-JUL 74,  
JUL 74 25P TRAXLER, RICHARD W. ;  
CONTRACT: DAAG17-73-C-0276  
PROJ: DA-64-00037-T-253  
MONITOR: NDC TR-75-113-FSL

UNCLASSIFIED REPORT

DESCRIPTORS: \*TNT, \*BIODETERIORATION, METABOLISM,  
BACTERIA, MOLECULAR ISOMERISM,  
WASTES(INDUSTRIAL), EXPLOSIVES  
IDENTIFIERS: NITRO COMPOUNDS, INDUSTRIAL WASTE  
TREATMENT, BIOLOGICAL INDUSTRIAL WASTE TREATMENT,  
\*MICROBIAL DEGRADATION, HETEROTROPHY

(U)

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GRAM NEGATIVE BACTERIA HAVE BEEN ISOLATED FROM  
SEVERAL SOURCES WHICH USE 2,4,6-TRINITROTOLUENE  
(ALPHA-TNT) AS THE SOLE SOURCE OF CARBON AND  
NITROGEN FOR GROWTH. THERE IS A DIRECT RELATIONSHIP  
BETWEEN THE ALPHA-TNT CONCENTRATION IN THE GROWTH  
MEDIUM AND GROWTH RESPONSE OF ISOLATE I-2WT AS  
WELL AS THE PERCENTAGE OF TNT DEGRADATION BY THIS  
ORGANISM. STUDIES USING RING UL-14C-TNT  
SUGGESTED POSSIBLE RING CLEAVAGE (BIODEGRADATION)  
OF TNT AS 14C ACTIVITY WAS RELEASED AS CARBON  
DIOXIDE AND ALSO FOUND IN THE CELLS. HETEROTROPHIC  
CARBON DIOXIDE FIXATION WAS DEMONSTRATED USING  
NAH(14)CO3 ADDED TO A CULTURE GROWING ON  
UNLABELED TNT.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A017 305 2/3 13/2 6/8  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

SUGAR PLANT WASTE WATER SUITABLE FOR  
IRRIGATION (PRIGODNOST DLYA UPOSHENIYA I  
UDOBRITELBNAYA TSENNOSTB ZAVODOV), (U)

NOV 75 9P DODOLINA, V. T. ;  
REPT. NO. CRREL-TL-501

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DRAFT TRANS. OF SAKHARNAYA  
PROMYSHLENNOST (USSR) N2 P24-27 NOV 74.

DESCRIPTORS: \*IRRIGATION SYSTEMS, \*WASTE WATER,  
\*WASTES(INDUSTRIAL), INDUSTRIAL PLANTS,  
SUGARS, FOOD PROCESSING, PURIFICATION,  
FILTRATION, ACCEPTABILITY, FARM CROPS, GRASSES,  
TRANSLATIONS, USSR (U)  
IDENTIFIERS: SUGAR INDUSTRY (U)

WASTE WATER IS USED IN AGRICULTURAL IRRIGATION  
FIELDS. THEIR CREATION CONTRIBUTES TO OBTAINING  
LARGE HARVESTS AND INCREASES THE PRODUCTIVITY OF THE  
SOIL AND IT PROVIDES FOR RENDERING WASTE WATER  
HARMLESS AND PURIFIED. THIS REPORT PRESENTS THE  
SUITABILITY OF WASTE WATER FROM A SUGAR PLANT FOR  
IRRIGATION BY STUDYING SOIL, CLIMATE, HYDROGEOLOGY  
AND THE COMPOSITION OF THE WASTE WATER. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A017 306 2/3 13/2 6/8  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

SUGAR PLANT WASTE WATER UTILIZED FOR  
IRRIGATION (OPVIT ISPOL ZOVANIYA STOCHN IKH  
VOD SAKHARNIKH ANODOV NA OROSHENIE), (U)

NOV 75 13P DODOLINA, V. T. ; NOVIKOV, V.  
M. ;  
REPT. NO. CRREL-TL-500

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DRAFT TRANS. OF SAKHARNAYA  
PROMYSHLENNOST (USSR) N1 P18-22 1975.

DESCRIPTORS: \*IRRIGATION SYSTEMS, \*WASTE WATER,  
\*WASTES (INDUSTRIAL), SUGARS, FOOD PROCESSING,  
INDUSTRIAL PLANTS, PURIFICATION, FERTILIZERS,  
SOILS, FARM CROPS, GRASSES, ACCEPTABILITY,  
TRANSLATIONS, USSR (U)  
IDENTIFIERS: SUGAR INDUSTRY (U)

WASTEWATER FROM SUGAR PLANTS IS USED FOR IRRIGATING  
FIELDS IN RUSSIA. THEY CONTRIBUTE TO OBTAINING  
LARGE AND STABLE HARVESTS OF AGRICULTURAL CROPS AND  
TO INCREASING THE FRUITFULNESS OF THE SOIL AND THEY  
MAKE IT POSSIBLE TO USE LESS FRUITFUL, MARGINAL LAND  
FOR AGRICULTURAL PURPOSES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A018 238 13/2 6/6  
DAVID W TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER  
BETHESDA MD

PROCEEDINGS OF THE TECHNOLOGY TRANSFER  
SEMINAR/WORKSHOP ON THE APPLICATION OF  
POLLUTION ABATEMENT TECHNOLOGY TO LOCAL  
GOVERNMENTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAY 75 149P STINSON, JAMES W. ;  
REPT. NO. DTNSRDC-4672

UNCLASSIFIED REPORT

DESCRIPTORS: \*POLLUTION ABATEMENT, \*TECHNOLOGY  
TRANSFER, \*WASTE TREATMENT, NAVAL RESEARCH,  
ENVIRONMENTAL PROTECTION, BOATS, SEWAGE TREATMENT,  
SOLID WASTES, WASTE DISPOSAL, OIL SPILLS,  
WORKSHOPS(MEETINGS), STATE GOVERNMENT, WATER  
POLLUTION, ANTIFOULING COATINGS, TOXICITY,  
BIOASSAY, ENVIRONMENTS, QUALITY CONTROL,  
HARBORS

(U)

IDENTIFIERS: CHESAPEAKE BAY, LOCAL  
GOVERNMENTS

(U)

CONTENTS: INTRODUCTION -- KEYNOTE,  
TECHNOLOGY TRANSFER IN THE NAVY; TECHNICAL  
SESSION -- EPA PROGRAM FOR ABATEMENT OF  
POLLUTION FROM BOATS, SEWAGE TREATMENT  
DEVICES ON GREAT LAKES CARRIERS, THE  
COAST GUARD SHIPBOARD RESEARCH AND  
DEVELOPMENT PROGRAM, THE NAVAL SEA  
SYSTEMS COMMAND ENVIRONMENTAL PROTECTION  
PROGRAM, POLLUTION ABATEMENT CONCERNS ON THE  
STATE LEVEL, POLLUTION ABATEMENT CONCERNS  
OF ANNE ARUNDEL COUNTY, POLLUTION ABATEMENT  
CONCERNS AT THE CITY LEVEL, AND TECHNIQUES OF  
TECHNOLOGY TRANSFER; WORKSHIP PROGRAMS --  
WORKSHIP A - HARBOR OIL SPILL RECOVERY,  
WORKSHOP B - TEST AND EVALUATION PROCEDURES  
FOR SELECTING NEWLY DEVELOPED POLLUTION  
ABATEMENT EQUIPMENT, WORKSHIP C - PUMP-  
OUT WASTE TREATMENT METHODS, WORKSHOP D -  
SOLIDS WASTE DISPOSAL, WORKSHOP E -  
DEVELOPMENT OF ENVIRONMENTALLY COMPATIBLE  
ANTIFOULING MATERIALS (BOTTOM PAINTS FOR  
BOATS), AND WORKSHOP F - ENVIRONMENTAL  
MEASUREMENT OF TOXICITY OF INDUSTRIAL  
CHEMICALS USING CHESAPEAKE BAY ORGANISMS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A019 795 13/2  
EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

PRELIMINARY ENVIRONMENTAL SURVEY RADFORD  
ARMY AMMUNITION PLANT, RADFORD, VIRGINIA,  
SEPTEMBER 1973. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. SEP 73-APR 75,  
DEC 75 69P BENDER, EDWARD S. ; GIBSON,  
JONATHAN S. ; STILES, DAVID A. ; FULLER, JOHN  
J. ; ROBINSON, PAUL F. ;  
REPT. NO. EB-TR-76014  
PROJ: AMC-PAA-5754114

UNCLASSIFIED REPORT

DESCRIPTORS: \*MILITARY FACILITIES, \*ENVIRONMENTAL  
ENGINEERING, \*AIR QUALITY, \*WATER QUALITY,  
\*MUNITIONS INDUSTRY, VIRGINIA, NATURAL RESOURCES,  
WASTES (INDUSTRIAL), AIR POLLUTION, WATER  
POLLUTION, SOLID WASTES, WASTE DISPOSAL, EMISSION,  
POLLUTION ABATEMENT, TOPOGRAPHY, DRAINAGE,  
GEOLOGY, WILDLIFE, VEGETATION (U)  
IDENTIFIERS: HAZARDOUS MATERIALS (U)

THE INFORMATION COMPILED IN THIS REPORT IS TO PLAN  
SURVEYS AND INTERPRET THEIR RESULTS AT RADFORD  
ARMY AMMUNITION PLANT, RADFORD, VIRGINIA.  
THIS WORK WAS INITIATED IN SEPTEMBER 1973. THIS  
REPORT CONTAINS BACKGROUND INFORMATION ON THE NATURE  
OF RADFORD ARMY AMMUNITION PLANT AND THE  
SURROUNDING TWO COUNTY AREAS, THEIR NATURAL  
RESOURCES, AND THE ACTUAL OR POTENTIAL ENVIRONMENTAL  
IMPACT ON THESE RESOURCES AFFECTED BY RADFORD  
ARMY AMMUNITION PLANT. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A020 193 18/8 15/6 13/2  
ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT CENTER  
FORT BELVOIR VA

DECONTAMINATION OF WATER CONTAINING  
RADIOLOGICAL WARFARE AGENTS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. NOV 49-NOV 75,  
MAR 75 94P LINDSTEN, DON C. ; SCHMITT,  
RICHARD P. ;

REPT. NO. USAMERDC-2136  
PROJ: DA-1-G-762708-AH-67  
TASK: 1-G-762708-AH-67-WA

UNCLASSIFIED REPORT

DESCRIPTORS: \*RADIOACTIVE WASTES, \*WATER POLLUTION,  
\*DECONTAMINATION, \*NUCLEAR WARFARE, \*WATER  
TREATMENT, PURIFICATION, RADIOACTIVE CONTAMINATION,  
RADIOACTIVE ISOTOPES, DISTILLATION, ION EXCHANGE,  
GROUND WATER, RADIATION HAZARDS, MONITORING,  
COAGULATION, DISINFECTION, FILTRATION, FISSION  
PRODUCT POISONING, FIELD TESTS, RADIATION MEASURING  
INSTRUMENTS

(U)

IDENTIFIERS: REVERSE OSMOSIS

(U)

THIS REPORT SUMMARIZES RESEARCH AND DEVELOPMENT  
STUDIES CONDUCTED BY THE U.S. ARMY SINCE 1949  
ON THE DECONTAMINATION OF WATER CONTAINING  
RADIOLOGICAL SUBSTANCES. IT WAS FOUND THAT NUCLEAR  
WEAPONS CAN SERIOUSLY CONTAMINATE FIELD WATER  
SUPPLIES WITH FISSION PRODUCTS, UNFISSIONED URANIUM  
OR PLUTONIUM, OR NEUTRON-ACTIVATED RADIOISOTOPES. A  
SEMIQUANTITATIVE CHECK OF THE LEVEL OF ACTIVITY IN  
WATER CAN BE MADE WITH A STANDARD PDR-27 BETA-GAMMA  
RADIATION METER. THE STANDARD ARMY ERDLATOR  
UNIT IS EFFECTIVE REMOVING RADIOACTIVE SUBSTANCES  
FROM WATER WHEN PRESENT AS SUSPENDED TURBIDITY. THE  
ERDLATOR UNIT WILL NOT REMOVE RADIOACTIVE  
CONTAMINANTS PRESENT AS SOLUBLE RADIOISOTOPES. THE  
STANDARD ARMY ION EXCHANGE UNIT, USED AS A  
POST TREATMENT DEVICE AFTER THE ERDLATOR UNIT,  
REMOVES SOLUBLE ACTIVITY. THE STANDARD ARMY VAPOR  
COMPRESSION DISTILLATION UNIT IS EFFECTIVE IN  
DECONTAMINATING WATER CONTAINING RADIOACTIVE  
MATERIAL. THE REVERSE OSMOSIS WATER PURIFICATION  
PROCESS HOLDS PROMISE OF A HIGH LEVEL OF  
DECONTAMINATION OF RADIOACTIVITY PRESENT IN THE WATER  
IN BOTH THE SOLUBLE AND INSOLUBLE STATES.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A020 698 13/2 19/1  
PICATINNY ARSENAL DOVER N J

AMMONIA REMOVAL FROM WASTEWATERS: A  
REVIEW OF THE STATE OF THE ART.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUL-DEC 74,  
JAN 76 64P WHITING, JOHN H. ; ADAMS, A.  
PAUL ; ROTH, MILTON ;  
REPT. NO. PA-TR-4904  
PROJ: USATECOM-5-CO-523-ECF-011

UNCLASSIFIED REPORT

DESCRIPTORS: •WASTE TREATMENT,  
•WASTES(INDUSTRIAL), •WASTE WATER, •MUNITIONS  
INDUSTRY, •MILITARY FACILITIES, STATE OF THE ART,  
AMMONIA, REMOVAL, TOXICITY, COST EFFECTIVENESS,  
OXIDATION, ALGAE, NITRATES, ION EXCHANGE,  
REGULATIONS, LAND USE, REVERSE OSMOSIS,  
EFFECTIVENESS, CHLORINATION  
IDENTIFIERS: •INDUSTRIAL WASTE TREATMENT,  
NITRIFICATION, •DENITRIFICATION

(U)

(U)

PROCESSES APPLICABLE TO THE REMOVAL OF AMMONIA  
PRESENT IN MUNITIONS PLANT WASTE STREAMS WERE  
REVIEWED AND EVALUATED. THE HIGH LEVELS OF  
AMMONIA, NITRATES, AND THE PRESENCE OF VARIOUS  
EXPLOSIVE WASTES CONTAINED IN THE WASTEWATERS PRESENT  
UNIQUE PROBLEMS TO AMMONIA ABATEMENT PROCESSES.  
ABATEMENT REGULATIONS REQUIRE REMOVAL OF BOTH THE  
AMMONIA AND NITRATES FROM THESE MUNITION PLANT WASTE  
STREAMS. SEVERAL PROCESSES ARE EFFECTIVE IN THE  
REMOVAL OF AMMONIA FROM WASTEWATERS, BUT THEY DO NOT  
REDUCE THE NITRATE CONCENTRATION. OTHER PROCESSES  
MUST BE EMPLOYED TO ACCOMPLISH THE NITRATE REMOVAL,  
THUS IMPOSING ADDITIONAL COSTS. AMMONIA REMOVAL  
PROCESSES SUCH AS AIR STRIPPING, ION EXCHANGE, AND  
BREAKPOINT CHLORINATION ARE EXAMPLES OF METHODS THAT  
ARE ONLY EFFECTIVE IN REMOVING AMMONIA. BIOLOGICAL  
NITRIFICATION-DENITRIFICATION IS AN EFFECTIVE TWO-  
STEP ABATEMENT PROCESS FOR REDUCING BOTH AMMONIA AND  
NITRATE CONCENTRATIONS IN THE WASTEWATER. IT IS A  
CLEAN, EFFICIENT, AND COST-EFFECTIVE PROCESS IN WHICH  
AMMONIA IS BIOLOGICALLY OXIDIZED TO NITRITE, THEN TO  
NITRATE WHICH, IN TURN, IS REDUCED TO NITROGEN GAS BY  
THE BIOLOGICAL DENTRIFICATION PROCESS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A021 773 13/2 6/5  
NAVAL COASTAL SYSTEMS LAB PANAMA CITY FLA

VIRUS ELIMINATION IN WATER AND  
WASTEWATER.

(U)

DESCRIPTIVE NOTE: INFORMAL REPT.,  
JAN 76 40P KATZENSTEIN, L. B. ;BRASWELL,  
J. A. ;  
REPT. NO. NCSL-269-76

UNCLASSIFIED REPORT

DESCRIPTORS: \*WASTE WATER, \*VIRUSES, \*WATER  
TREATMENT, \*SEWAGE TREATMENT, DISINFECTION,  
CHLORINATION, OZONATION, COAGULATION,  
FILTRATION, SEDIMENTATION, WASTE TREATMENT,  
BIBLIOGRAPHIES, SANITARY ENGINEERING, SANITATION,  
COST ANALYSIS, REMOVAL, INACTIVATION, ALUMS,  
IRON COMPOUNDS, CALCIUM OXIDES, RESIDUAL, PUBLIC  
HEALTH, DRINKING WATER

(U)

IDENTIFIERS: \*WATER POLLUTION CONTROL

(U)

THE EFFECTIVENESS OF VARIOUS TECHNIQUES FOR  
DISINFECTING SEWAGE AND DRINKING WATER ARE DISCUSSED.  
SPECIAL EMPHASIS IS GIVEN TO THE ELIMINATION OF  
VIRUSES. BASIC CONCEPTS OF WATER AND WASTEWATER  
TREATMENT SUCH AS COAGULATION, FILTRATION, OZONATION,  
AND CHLORINATION ARE REVIEWED. INFORMATION IS  
PRESENTED ON ECONOMICALLY FEASIBLE METHODS FOR  
IMPROVING VIRUS REMOVAL THROUGH THE APPLICATION OF  
NEW TECHNOLOGY TO CONVENTIONAL TREATMENT TECHNIQUES.  
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A022 653 8/1 13/2  
MARYLAND UNIV SOLOMONS NATURAL RESOURCES INST

EFFECTS OF SUSPENDED SOLIDS ON SELECTED  
ESTUARINE PLANKTON.

(U)

DESCRIPTIVE NOTE: MISCELLANEOUS REPT.,  
JAN 76 51P SHERK, J. A. , JR.;  
O'CONNOR, J. M. ; NEUMANN, D. A. ;  
CONTRACT: DACW72-71-C-0003  
MONITOR: CERC MR-76-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*PLANKTON, \*SEDIMENTS,  
\*GROWTH(PHYSIOLOGY), \*WATER POLLUTION,  
PARTICLE SIZE, CONCENTRATION(COMPOSITION),  
ESTUARIES, CARBON, DREDGING, SILICON DIOXIDE,  
INGESTION(PHYSIOLOGY), PHOTOSYNTHESIS,  
EXPOSURE(PHYSIOLOGY), FLOODS, WASTE DISPOSAL,  
RIVERS, MARYLAND

(U)

IDENTIFIERS: PHYTOPLANKTON, PATUXENT RIVER,  
WATER POLLUTION EFFECTS(ANIMALS)

(U)

A THREE-YEAR LABORATORY STUDY IDENTIFIED BIOLOGICAL  
COMPONENTS OF SELECTED POPULATIONS OF ESTUARINE  
ORGANISMS WHICH WERE MOST SENSITIVE TO THE EFFECTS OF  
PARTICLE SIZE AND CONCENTRATION OF (A) SUSPENDED  
MINERAL SOLIDS SIMILAR IN SIZE TO SEDIMENTS LIKELY TO  
BE FOUND IN, OR ADDED TO, ESTUARINE SYSTEMS IN  
CONCENTRATIONS TYPICALLY FOUND DURING FLOODING,  
DREDGING, AND DISPOSAL OF DREDGED MATERIAL, AND  
(B) NATURAL SEDIMENTS IN IDENTICAL EXPERIMENTS.  
CARBON ASSIMILATION BY FOUR SPECIES OF  
PHYTOPLANKTON WAS SIGNIFICANTLY REDUCED BY THE LIGHT  
ATTENUATING PROPERTIES OF FINE SILICON DIOXIDE  
SUSPENSIONS. INGESTION OF RADIOACTIVELY TAGGED  
FOOD CELLS BY TWO SPECIES OF CALANOID COPEPODS WAS  
SIGNIFICANTLY REDUCED DURING EXPOSURE TO SUSPENSIONS  
OF FULLER'S EARTH, FINE SILICON DIOXIDE, AND  
NATURAL PATUXENT RIVER SILT. THIS REPORT  
PROVIDES BASE-LINE DATA FOR PREPROJECT DECISIONMAKING  
BASED ON CONCENTRATION EFFECTS OF DIFFERENT SUSPENDED  
SEDIMENTS ON SELECTED TYPICAL ESTUARINE PLANKTON. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A023 194 18/4  
HARRY DIAMOND LABS ADELPHI MD

ANALYSIS OF THE GAS-STACK MONITOR  
CALIBRATION DATA FOR THE DIAMOND ORDNANCE  
RADIATION FACILITY. (U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,  
OCT 75 17P WRIGHT, THOMAS P. ;  
REPT. NO. HDL-TM-75-19  
PROJ: HDL-290E28

UNCLASSIFIED REPORT

DESCRIPTORS: \*RADIATION MONITORS, \*RADIOACTIVE  
WASTES, \*CALIBRATION, MONITORING, EXHAUST GASES,  
RADIOACTIVE WASTES, ARGON, DATA PROCESSING,  
RADIATION HAZARDS, RADIOLOGICAL LABORATORIES,  
RADIOACTIVE ISOTOPES, COMPUTER PROGRAMS (U)  
IDENTIFIERS: SOFTWARE, \*AIR POLLUTION DETECTION,  
AIR POLLUTION SAMPLING (U)

IN ORDER TO EFFECTIVELY MONITOR THE RELEASE OF  
RADIOACTIVE ARGON-41 GAS FROM THE DORF SITE, IT IS  
NECESSARY TO PERIODICALLY CALIBRATE THE MONITORING  
EQUIPMENT. THIS REPORT REVIEWS THE ANALYSIS OF THE  
CALIBRATION CASE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A023 514 13/2

ASSEMBLY OF ENGINEERING MARINE BOARD WASHINGTON D C

WASTE MANAGEMENT FOR THE COASTAL ZONE:

CONCEPTS FOR THE ASSESSMENT OF OCEAN OUTFALLS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAR 76 34P GLOYNA, E. F. ; ARMSTRONG,

NEAL E. ; GEYER, JOHN C. ; LANG, M. ; PARKHURST,

J. D. ;

CONTRACT: N00014-67-A-0244-0002

UNCLASSIFIED REPORT

DESCRIPTORS: \*SEWAGE DISPOSAL, \*OCEAN ENVIRONMENTS,

\*COASTAL REGIONS, WASTE WATER, REGULATIONS,

WASTE DISPOSAL, ASSESSMENT, ENVIRONMENTAL

PROTECTION, STANDARDS, MANAGEMENT, TOXIC HAZARDS,

SEWAGE TREATMENT, LAW (U)

IDENTIFIERS: \*OUTFALL SEWERS, \*OCEAN WASTE

DISPOSAL (U)

IN 1973 THE MARINE BOARDS ASSIGNMENT WAS TO REVIEW COASTAL WASTEWATER MANAGEMENT PRACTICES AND THEIR ENVIRONMENTAL IMPACTS. THE REPORT CONSIDERS VARIOUS WASTE MATERIALS NOW DISPOSED THROUGH OCEAN OUTFALLS, EVALUATES SEVERAL WASTE DISPOSAL SYSTEMS, AND ASSESSES FEDERAL REGULATIONS GOVERNING WASTE DISPOSAL. IT DEALS PARTICULARLY WITH THE RATIONALE FOR SETTING FEDERAL STANDARDS TO PROTECT THE MARINE ENVIRONMENT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A023 680 19/1 13/2  
EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

PRELIMINARY ENVIRONMENTAL SURVEY, SUNFLOWER  
ARMY AMMUNITION PLANT, LAWRENCE, KANSAS,  
AUGUST 1974. (U)

DESCRIPTIVE NOTE: SPECIAL PUBLICATION OCT 73-APR 75,  
MAR 76 55P PEARSON, J. GARETH ; TAORMINA,  
DANIEL J. ; ASAKI, ARTHUR E. ; HERTERT, H.  
DUNCAN ; MCBRIDE, J. KELLY ;  
REPT. NO. EB-SP-76009  
PROJ: DARCOM-PAA-57541,4  
TASK: 2

UNCLASSIFIED REPORT

DESCRIPTORS: \*MUNITIONS INDUSTRY, \*ENVIRONMENTAL  
IMPACT STATEMENTS, WILDLIFE, ECOLOGY, AIR QUALITY,  
WATER QUALITY, NITROGUANIDINE,  
WASTES (INDUSTRIAL), ENVIRONMENTAL PROTECTION,  
CLIMATE, WASTE DISPOSAL, SOLID WASTES, NATURAL  
RESOURCES, TOPOGRAPHY, PEST CONTROL, POLLUTION  
ABATEMENT, KANSAS (U)

IDENTIFIERS: SUNFLOWER AMMUNITION PLANT (KANSAS),  
\*ENVIRONMENTAL SURVEYS, SOLID WASTE DISPOSAL (U)

THIS REPORT PRESENTS THE DATA COMPILED DURING A  
PRELIMINARY ENVIRONMENTAL SURVEY CONDUCTED AT  
SUNFLOWER ARMY AMMUNITION PLANT (SAAP). THE  
ACTUAL OR POTENTIAL ENVIRONMENTAL IMPACT OF THE  
OPERATIONS PERFORMED AT SAAP IS DISCUSSED AND AN  
ECOLOGICAL SURVEY TO QUANTIFY THE EFFECTS IS  
PRESENTED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A024 191 13/2 6/6 6/3 19/1  
WAPORA INC WASHINGTON D C

AQUATIC FIELD SURVEYS AT RADFORD, HOLSTON,  
VOLUNTEER, AND MILAN ARMY AMMUNITION  
PLANTS. VOLUME 1. RADFORD.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

DEC 75 161P HUFF, BERNARD L. ; DUCKERT,  
WILLIAM ; BARDING, PAUL ; WHEELER, JAMES ; BOGARDUS,  
RAYMOND B. ;

CONTRACT: DAMD17-74-C-4138

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A024  
192.

DESCRIPTORS: \*WASTES(INDUSTRIAL), \*EXPLOSIVES,  
\*WATER POLLUTION, \*RIVERS, \*ECOLOGY, BACTERIA,  
AQUATIC ANIMALS, PLANKTON, PROTOZOA,  
INVERTEBRATES, CARBON, NITRATES, ALKALINITY,  
THERMAL POLLUTION, MUNITIONS INDUSTRY,  
ENVIRONMENTAL PROTECTION, CHEMICAL PROPERTIES,  
FISHES, SEDIMENTS, OXYGEN, SURVEYS, VIRGINIA

(U)

IDENTIFIERS: \*WATER QUALITY DATA, \*WATER POLLUTION  
EFFECTS(ANIMALS), \*WATER POLLUTION  
EFFECTS(PLANTS), RADFORD ARMY AMMUNITION  
PLANT, \*NEW RIVER(VIRGINIA), \*FRESH WATER  
BIOLOGY

(U)

LABORATORY AND FIELD STUDIES WERE CONDUCTED ON  
SEPTEMBER 16-20, 1974 AT THE RADFORD ARMY  
AMMUNITION PLANT (RAAP) TO DETERMINE POSSIBLE  
EFFECTS OF MUNITION MANUFACTURING WASTES ON THE  
AQUATIC LIFE IN THE NEW RIVER, VIRGINIA.  
MACROINVERTEBRATE DIVERSITY WAS REDUCED BELOW THE  
C-LINE ACID NEUTRALIZATION FACILITY AND  
NITROGLYCERIN AREA NO. 1 DISCHARGES AND  
REMAINED AT A LOW LEVEL. DECREASED  
MACROINVERTEBRATE COMMUNITY DIVERSITY WAS FOUND AT  
THE STATIONS ON STROUBLES CREEK BELOW THE MAJOR  
SOLVENT AND THERMAL DISCHARGES AS COMPARED WITH AN  
UPSTREAM REFERENCE STATION. THE FOLLOWING  
PARAMETERS DETERMINED FROM LABORATORY ANALYSES OF  
WATER SAMPLES WERE APPARENTLY AFFECTED BY RAAP  
OPERATIONS: ALKALINITY, COLOR, TOTAL DISSOLVED  
SOLIDS, TOTAL ORGANIC CARBON, SULFATES, NITRATES,  
NITRITES, AND TOTAL KJELDAHL NITROGEN.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A024 192 13/2 6/6 6/3 19/1  
WAPORA INC WASHINGTON D C

AQUATIC FIELD SURVEYS AT RADFORD, HOLSTON,  
VOLUNTEER, AND MILAN ARMY AMMUNITION  
PLANTS. VOLUME II. HOLSTON.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 75 143P HUFF, BERNARD L. ; DUCKERT,  
WILLIAM D. ; BARDING, PAUL G. ; WHEELER, JAMES  
H. ; BOGARDUS, RAYMOND B. ;  
CONTRACT: DAMD17-74-C-4138

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-A024 191  
AND VOLUME 3, AD-A024 193.

DESCRIPTORS: \*WASTES(INDUSTRIAL), \*EXPLOSIVES,  
\*WATER POLLUTION, \*RIVERS, \*ECOLOGY, BACTERIA,  
AQUATIC ANIMALS, PLANKTON, PROTOZOA,  
INVERTEBRATES, MUNITIONS INDUSTRY, ENVIRONMENTAL  
PROTECTION, CHEMICAL PROPERTIES, FISHES,  
SEDIMENTS, OXYGEN, TEMPERATURE, CARBON,  
NITRATES, PH FACTOR, SURVEYS, TENNESSEE  
IDENTIFIERS: \*WATER QUALITY DATA, \*WATER POLLUTION  
EFFECTS(ANIMALS), \*WATER POLLUTION  
EFFECTS(PLANTS), HOLSTON ARMY AMMUNITION  
PLANT, \*HOLSTON RIVER, \*FRESH WATER BIOLOGY

(U)

(U)

LABORATORY AND FIELD STUDIES WERE CONDUCTED FROM  
SEPTEMBER 23-28, AND OCTOBER 16, 1974 AT THE  
HOLSTON ARMY AMMUNITION PLANT (HAAP) TO  
DETERMINE THE EFFECTS OF MUNITION MANUFACTURING  
WASTES ON THE AQUATIC LIFE IN THE HOLSTON RIVER,  
TENNESSEE. IN ADDITION TO LABORATORY AND FIELD  
DETERMINATIONS OF SELECTED CHEMICAL AND PHYSICAL  
PARAMETERS THE FOLLOWING AQUATIC GROUPS WERE  
INVESTIGATED: BACTERIA, PROTOZOA, PHYTOPLANKTON,  
PERIPHYTON, ZOOPLANKTON, BENTHIC MACROINVERTEBRATES  
AND FISH. ANALYTICAL DATA GENERATED IN THIS STUDY  
ARE BASED ON THE RESULTS OBTAINED FROM SINGLE GRAB  
SAMPLES AND SHOULD BE CONSIDERED WITHIN THAT  
LIMITATION. OF THE PHYSICAL/CHEMICAL IN SITU  
PARAMETERS, ONLY PH AND TEMPERATURE APPEARED TO BE  
INFLUENCED BY THE PLANT. THE CONTRIBUTION OF WASTE  
SOURCES FROM OTHER INDUSTRIES LOCATED UPSTREAM TENDED  
TO MASK ANY IMPACT OF HAAP DISCHARGES ON THE WATER  
QUALITY OF THE HOLSTON RIVER.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A024 193 13/2 6/6 6/3 19/1  
WAPORA INC WASHINGTON D C

AQUATIC FIELD SURVEYS AT RADFORD, HOLSTON,  
VOLUNTEER, AND MILAN ARMY AMMUNITION  
PLANTS. VOLUME III. VOLUNTEER.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 75 150P HUFF, BERNARD L. ; DUCKERT,  
WILLIAM D. ; BARDING, PAUL G. ; WHEELER, JAMES  
H. ; HOGAN, TERRY M. ;  
CONTRACT: DAMD17-74-C-4138

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A024 192  
AND VOLUME 4, AD-A024 194.

DESCRIPTORS: \*WASTES(INDUSTRIAL), \*EXPLOSIVES,  
\*WATER POLLUTION, \*LAKES, \*ECOLOGY, BACTERIA,  
AQUATIC ANIMALS, PLANKTON, PROTOZOA,  
INVERTEBRATES, MUNITIONS INDUSTRY, ENVIRONMENTAL  
PROTECTION, FISHES, SEDIMENTS, CHEMICAL  
PROPERTIES, SAMPLING, OXYGEN, WATER QUALITY,  
PHOSPHATES, SURVEYS, TENNESSEE

(U)

IDENTIFIERS: \*WATER QUALITY DATA, \*WATER POLLUTION  
EFFECTS(ANIMALS), \*WATER POLLUTION  
EFFECTS(PLANTS), VOLUNTEER ARMY AMMUNITION  
PLANT, \*WACONDA BAY, FRESH WATER BIOLOGY,  
\*CHICKAMAUGA LAKE

(U)

LABORATORY AND FIELD STUDIES WERE CONDUCTED AT THE  
VOLUNTEER ARMY AMMUNITION PLANT (VAAP) TO  
DETERMINE THE EFFECTS OF MUNITIONS WASTES ON AQUATIC  
LIFE IN THE RECEIVING SYSTEM (WACONDA BAY,  
CHICKAMAUGA LAKE). IN ADDITION TO LABORATORY  
AND FIELD DETERMINATIONS OF SELECTED CHEMICAL AND  
PHYSICAL PARAMETERS THE FOLLOWING AQUATIC GROUPS WERE  
INVESTIGATED: BACTERIA, PROTOZOA, PHYTOPLANKTON,  
PERIPHYTON, ZOOPLANKTON, MACROINVERTEBRATES AND FISH.  
OF THE PHYSICAL/CHEMICAL IN-SITU PARAMETERS  
EXAMINED, DO, PH, AND CONDUCTIVITY WERE  
APPARENTLY INFLUENCED BY PLANT ACTIVITIES.  
ZOOPLANKTON NUMERICAL ABUNDANCE WAS REDUCED IN  
UPPER WACONDA BAY. BENTHIC MACROINVERTEBRATE  
DIVERSITY WAS REDUCED IN UPPER WACONDA BAY.  
THE BIOLOGICAL SAMPLING INDICATES THAT THE  
MACROINVERTEBRATE COMMUNITY RECOVERED OR NEARLY  
RECOVERED WITHIN THE CONFINES OF WACONDA BAY.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A024 194 13/2 6/6 6/3 19/1  
WAPORA INC WASHINGTON D C

AQUATIC FIELD SURVEYS AT RADFORD, HOLSTON,  
VOLUNTEER, AND MILAN ARMY AMMUNITION  
PLANTS. VOLUME IV. MILAN.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 75 120P HUFF, BERNARD L. ; DUCKERT,  
WILLIAM D. ; BARDING, PAUL G. ; WHEELER, JAMES  
H. ; HOGAN, TERRY M. ;  
CONTRACT: DAMD17-74-C-4138

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 3, AD-A024  
193.

DESCRIPTORS: \*WASTES(INDUSTRIAL), \*EXPLOSIVES,  
\*WATER POLLUTION, \*RIVERS, \*ECOLOGY, BACTERIA,  
AQUATIC ANIMALS, PLANKTON, PROTOZOA,  
INVERTEBRATES, MUNITIONS INDUSTRY, ENVIRONMENTAL  
PROTECTION, CHEMICAL PROPERTIES, FISHES,  
SEDIMENTS, OXYGEN, WATER QUALITY, PHOSPHATES,  
NITRATES, SURVEYS, TENNESSEE  
IDENTIFIERS: \*WATER QUALITY DATA, \*WATER POLLUTION  
EFFECTS(ANIMALS), \*WATER POLLUTION  
EFFECTS(PLANTS), MILAN ARMY AMMUNITION  
PLANT, \*OBION RIVER, MILAN(TENNESSEE),  
\*FRESH WATER BIOLOGY

(U)

(U)

STUDIES WERE UNDERTAKEN AT MILAN ARMY  
AMMUNITION PLANT (MAAP) TO DETERMINE THE  
EFFECTS OF MUNITIONS WASTES ON AQUATIC LIFE IN THE  
RECEIVING SYSTEM. THE FOLLOWING AQUATIC GROUPS WERE  
INVESTIGATED: BACTERIA, PHYTOPLANKTON,  
PERIPHYTON, ZOOPLANKTON, PROTOZOA, MACROINVERTEBRATES  
AND FISH. OF THE PHYSICAL/CHEMICAL IN SITU  
PARAMETERS, ONLY CONDUCTIVITY APPEARED TO BE  
INFLUENCED BY PLANT ACTIVITY. THOSE WATER AND  
SEDIMENT (LABORATORY) PARAMETERS WHICH APPEARED  
TO BE AFFECTED AS A RESULT OF PLANT ACTIVITIES  
WERE: TOTAL SOLIDS (WATER), TOTAL DISSOLVED  
SOLIDS, TOTAL VOLATILE SOLIDS, TKN,  
ORTHOPHOSPHATES, COD (WATER), TOC, OIL AND  
GREASE (WATER), CADMIUM (WATER), COD  
(SEDIMENTS), LEAD (SEDIMENTS) AND CHROMIUM  
(SEDIMENTS). OTHER PARAMETERS DEMONSTRATED  
CONCENTRATION PATTERNS NOT BASED ON PROXIMITY TO  
PLANT DISCHARGES.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A024 382 13/2 6/6  
EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

RESULTS OF AQUATIC SURVEYS AT PINE BLUFF  
ARSENAL, ARKANSAS, SEPTEMBER 1973-OCTOBER  
1974. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
APR 76 55P MANUEL, KENNETH L. ; BENDER,  
EDWARD S. ; PEARSON, J. GARETH ;  
REPT. NO. EB-TR-76038  
PROJ: AMC-PAA-5754114

UNCLASSIFIED REPORT

DESCRIPTORS: \*ECOLOGY, \*AMMUNITION,  
\*WASTES(INDUSTRIAL), \*WATER POLLUTION,  
SURVEYS, INVERTEBRATES, AQUATIC INSECTS, RUNOFF,  
WATER QUALITY, PHOSPHORUS, PESTICIDES,  
MONITORING, STREAMS, LAKES, MILITARY FACILITIES,  
ARKANSAS (U)

IDENTIFIERS: \*AQUATIC BIOLOGY, \*WATER QUALITY  
DATA, PINE BLUFF ARSENAL, SPECIES DIVERSITY (U)

BIOLOGICAL SURVEYS OF THE STREAMS ON PINE BLUFF  
ARSENAL (PBA) WERE CONDUCTED FROM JULY 1973  
THROUGH OCTOBER 1974. EACH STREAM WAS SAMPLED  
MONTHLY AT TWO STATIONS, ONE ABOVE THE BLUFF LINE AND  
ONE BELOW THE BLUFF LINE. SPECIES DIVERSITY IN THE  
STREAMS WAS ADVERSELY AFFECTED BY RUNOFF AND SCOURING  
AT THE SAMPLING STATIONS IN THE UPPER STREAM. AN  
ANALYSIS OF MACROINVERTEBRATE COLLECTIONS AND WATER  
CHEMISTRY DATA GATHERED DURING THE WATER-QUALITY  
MONITORING PROGRAM CONDUCTED AT PBA PERMITTED AN  
EVALUATION OF THE QUALITY OF THE WATER IN EACH  
DRAINAGE AREA. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A024 729 13/2  
DARCOM INTERN TRAINING CENTER TEXARKANA TEX

DESIGN AND EVALUATION OF AN OILY WASTES  
DISPOSAL SYSTEM FOR RED RIVER ARMY  
DEPOT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
APR 76 97P CROUSE, FLOYD W. , JR;  
REPT. NO. DARCOM-ITC-02-08-76-003

UNCLASSIFIED REPORT

DESCRIPTORS: \*WASTE DISPOSAL, \*OILS, \*OIL  
POLLUTION, \*MILITARY FACILITIES, COLLECTION,  
REGULATIONS, MARINE BIOLOGY, INCINERATORS,  
SEPARATION

(U)

IDENTIFIERS: GOVERNMENT POLICIES, OIL WASTES,  
LIQUID WASTE DISPOSAL, OIL POLLUTION CONTROL,  
WATER POLLUTION CONTROL, LAGOONS(PONDS), RED  
RIVER ARMY DEPOT

(U)

THE OBJECTIVES OF THIS RESEARCH PROJECT WERE AS  
FOLLOWS: (1) TO PROPOSE AN OILY WASTE  
COLLECTION SYSTEM THAT WILL MEET ENVIRONMENTAL  
PROTECTION AGENCY (EPA) EFFLUENT REQUIREMENTS  
OF NOT MORE THAN 5 PPM OF OIL IN THE EFFLUENT LEAVING  
RED RIVER ARMY DEPOT (RRAD); (2) TO  
PROPOSE AN OPTIMUM METHOD OF DISPOSAL OF WASTE  
PETROLEUM OILS AND LUBRICANTS (POL'S) BY RRAD;  
(3) TO PROPOSE A GENERAL DESIGN FOR OIL  
COLLECTION THAT CAN BE USED BY MILITARY INSTALLATIONS  
THROUGHOUT THE UNITED STATES. SAMPLES WERE  
TAKEN FROM VARIOUS DRAINAGE DITCHES THROUGHOUT THE  
DEPOT FOR ANALYSIS. ANALYSIS OF THE SAMPLES  
INDICATED THAT THE EFFLUENT LEAVING RRAD CONTAINED  
12 PPM OIL. IT WAS DETERMINED THAT THE BEST METHOD  
TO SEPARATE THE OIL FROM THE EFFLUENT AT RRAD IS BY  
USE OF A LARGE LAGOON. THE BEST METHOD OF DISPOSAL  
FOR RRAD WAS DETERMINED TO BE BY COMBUSTION IN THE  
DEPOT'S BOILERS. BY USING THE COMBUSTION METHOD OF  
DISPOSAL RRAD COULD REGAIN ITS CAPITAL INVESTMENT  
FOR THE OILY WASTE SYSTEM WITHIN FIVE YEARS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A026 394 13/2 19/1  
WATER AND AIR RESEARCH INC GAINESVILLE FLA

WATER QUALITY ASSESSMENT FOR THE PROPOSED  
RDX-HMX FACILITY, MCALESTER NAVAL  
AMMUNITION DEPOT. VOLUME 1.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

FER 76 153P

CONTRACT: DAMD17-75-C-5049

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A026  
395.

DESCRIPTORS: \*WATER POLLUTION, \*STREAMS,  
\*RESERVOIRS, \*MUNITIONS INDUSTRY,  
\*WASTES(INDUSTRIAL), MILITARY FACILITIES,  
WATER QUALITY, OXYGEN, NITROGEN, PHOSPHORUS,  
BACTERIA, PLANKTON, AQUATIC ORGANISMS, ALGAE,  
FISHES, INVERTEBRATES, METALS, TURBIDITY,  
TABLES(DATA), OKLAHOMA, RDX, HMX

(U)

IDENTIFIERS: \*MCALESTER NAVAL AMMUNITION  
DEPOT, \*WATER QUALITY DATA, CHUN CREEK,  
PEACEABLE CREEK, GAINES CREEK, SPECIES  
DIVERSITY, BRUSHY CREEK, EUFAULA RESERVOIR,  
ENVIRONMENTAL IMPACTS

(U)

THE ENVIRONMENTAL ASSESSMENT ADDRESSES THE IMPACT  
OF AN RDX-HMX MANUFACTURING PLANT AT THE  
MCALESTER NAVAL AMMUNITION DEPOT. THE  
WASTE DISCHARGE OF THE PROPOSED FACILITY WILL ENTER  
THE CHUN - PEACEABLE CREEK SYSTEM NEAR ITS  
HEADWATERS AND CONVEY EFFLUENT TO THE GAINES  
CREEK ARM OF THE EUFAULA RESERVOIR.  
PRESENTLY, MNAD IS A TNT LOADING FACILITY AND  
ONLY A SMALL AMOUNT OF MUNITIONS RESIDUES ENTER THE  
STREAMS. THE IMPACT OF THE MNAD DISCHARGE AS  
CHARACTERIZED MAY ALTER THE EXISTING BIOTIC  
COMMUNITY. AMBIENT CONDITIONS IN THE STREAM REFLECT  
AN ASSEMBLAGE OF AQUATIC ORGANISMS INCLUDING SPECIES  
OF GAME FISH WHICH COULD BE DISRUPTED BY EXPOSURE TO  
SIGNIFICANT AMOUNTS OF MUNITIONS RESIDUES. FOR  
EXAMPLE, IN THE EVENT OF WASTE TREATMENT PLANT  
FAILURE, RAW WASTEWATER DISCHARGED TO THE STREAMS  
UNDER NO FLOW OR MEDIAN FLOW CONDITIONS WILL CAUSE  
SEVERE DISSOLVED OXYGEN DEFICITS PROBABLY TO THE  
POINT OF ANOXIA. WITH THE WASTE TREATMENT PLANT  
OPERATING AT DESIGN LEVELS, DISSOLVED OXYGEN  
CONCENTRATIONS LESS THAN 4 MG/L MAY OCCUR IN THE  
MIDDLE REACH OF PEACEABLE CREEK.

(U)

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/ZOM09

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A026 395 13/2 19/1  
WATER AND AIR RESEARCH INC GAINESVILLE FLA

WATER QUALITY ASSESSMENT FOR THE PROPOSED  
RDX-HMX FACILITY, MCALESTER NAVAL  
AMMUNITION DEPOT. VOLUME II.

(U)

DESCRIPTIVE NOTE: FINAL REPT.  
FEB 76 137P  
CONTRACT: DAMD17-75-C-5049

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-A026  
394.

DESCRIPTORS: \*WATER POLLUTION, \*STREAMS,  
\*RESERVOIRS, \*MUNITIONS INDUSTRY,  
\*WASTES(INDUSTRIAL), LAW(JURISPRUDENCE),  
WATER QUALITY, CHEMICAL PROPERTIES, BACTERIA,  
MILITARY FACILITIES, RDX, HMX, TEMPERATURE,  
OXYGEN, PH FACTOR, CONDUCTIVITY, TURBIDITY,  
TABLES(DATA), OKLAHOMA

(U)

IDENTIFIERS: \*MCALESTER NAVAL AMMUNITION  
DEPOT, \*WATER QUALITY DATA, CHUN CREEK,  
PEACEABLE CREEK, GAINES CREEK, BRUSHY  
CREEK, EUFAULA RESERVOIR

(U)

CONTENTS: GENERAL OKLAHOMA WATER POLLUTION  
CONTROL LAWS; DETAILS ON ANALYTICAL PROCEDURES  
USED; DAILY VARIATION AND UNIVARIATE STATISTICS;  
CHEMICAL AND BACTERIOLOGICAL WATER QUALITY BY  
STATION; TABULATION OF FIELD DATA.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A027 418 13/2  
NAVAL ACADEMY ANNAPOLIS MD ENERGY-ENVIRONMENT STUDY  
GROUP

STUDIES OF DETERGENT SYSTEMS USEFUL IN  
TREATMENT OF BILGE WATER AND OTHER SEWAGE  
DISPOSAL SYSTEMS. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JUL-31 AUG 75,  
MAR 76 18P MASSIE, SAMUEL P. ;  
REPT. NO. USNA-EPRD-23  
PROJ: TF57-572  
TASK: TF57-572-001

UNCLASSIFIED REPORT

DESCRIPTORS: \*WASTE TREATMENT, \*SEWAGE DISPOSAL,  
\*DETERGENTS, BILGES, WASTE WATER, EMULSIONS,  
QUANTITATIVE ANALYSIS, ULTRAVIOLET SPECTROSCOPY,  
FUEL OIL, LUBRICATING OILS, CYCLOHEXANES, SEA  
WATER (U)

ULTRA-VIOLET SPECTROSCOPY HAS BEEN USED TO STUDY  
SYSTEMS OF A NON-IONIC DETERGENT IN SYNTHETIC SEA  
WATER, AND IN CYCLOHEXANE, IN CONCENTRATIONS OF  
BETWEEN 100 AND 300 PPM, AS WELL AS MIXTURES OF THE  
DETERGENT AND (A) NAVY DISTILLATE FUEL  
OIL; (B) TURBINE EXTREME PRESSURE LUBE  
OIL; AND (C) A LIGHT LUBRICATING OIL, IN  
CYCLOHEXANE SOLUTION AND IN SYNTHETIC SEA WATER.  
THE DETERGENT SOLUTIONS WERE FOUND TO SHOW  
ABSORBANCE PEAKS AT 280 MU AND 277.5 MU, TO OBEY  
BEER'S LAW, AND THE QUANTITY OF DETERGENT PRESENT  
COULD BE RELATED TO THE ABSORBANCE AT THESE PEAKS.  
HOWEVER, IN THE OIL/DETERGENT MIXED SOLUTIONS,  
WHILE THE DETERGENT SHOWED PEAKS AT 284 MU AND 272.5  
MU, AND THUS COULD BE QUALITATIVELY IDENTIFIED, THE  
ABSORBANCE OF OIL AND DETERGENT WERE NOT  
QUANTITATIVELY ADDITIVE, AND THUS THE DETERGENT COULD  
NOT BE QUANTITATIVELY DETERMINED IN THE PRESENCE OF  
THE OILS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A029 530 13/2 13/10  
DAVID W TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER  
ANNAPOLIS MD MATERIALS DEPT

LABORATORY EVALUATION OF THE GATX EVAPORATIVE  
TOILET SYSTEM.

(U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT REPT.,

JUL 73 50P VAN HEES, WILLEM GILLS,

LOUIS C. ;

REPT. NO. MAT-28-735

PROJ: S4657

MONITOR: DTNSRDC 3948

UNCLASSIFIED REPORT

DESCRIPTORS: \*SANITARY ENGINEERING, \*TOILET  
FACILITIES, \*SHIPBOARD, \*WASTE TREATMENT, \*WATER  
POLLUTION, \*WASTE DISPOSAL, POLLUTION ABATEMENT,  
MAINTAINABILITY, INSTALLATION, SLUDGE

(U)

IDENTIFIERS: EVAPORATIVE TOILET, STERILE SLUDGE,  
WASTE EVAPORATION, WASTE CONCENTRATION

(U)

THE EVAPORATIVE TOILET SYSTEM MANUFACTURED BY  
GENERAL AMERICAN TRANSPORTATION CORPORATION  
WAS ACCEPTED FOR LABORATORY EVALUATION ABOARD MOBILE  
NOISE BARGE, MONOB YAG 61. AFTER MINOR PROBLEMS  
DURING THE INSTALLATION AND DEBUGGING PERIODS, THE  
SYSTEM OPERATED OVER 700 HOURS BEFORE A CRITICAL  
FAILURE WAS RECORDED ON 7 JANUARY 1973. THE  
FAILURE WAS DUE IN PART TO A PLUMBING ARRANGEMENT.  
CORRECTIVE ACTION WAS TAKEN, AND THE SYSTEM  
OPERATED AN ADDITIONAL 1150 HOURS WITHOUT FAILURE, TO  
DEMONSTRATE SUCCESSFULLY THE REQUIRED MEAN TIME  
BETWEEN FAILURES OF 500 HOURS. A MAINTAINABILITY  
DEMONSTRATION INVOLVING 22 MAINTENANCE EVENTS WAS  
UNSUCCESSFUL DUE PRIMARILY TO THE DESIGN AND  
INSTALLATION LOCATIONS OF THE EVAPORATOR/HOLDING TANK  
SUBSYSTEM. THE SPECIFIED MAXIMUM REPAIR TIME OF 5  
HOURS WAS EXCEEDED BY 1 HOUR, AND THE SPECIFIED  
MAXIMUM REPAIR TIME OF 1 HOUR FOR COMPONENTS OF THE  
TRANSPORT FUNCTION WAS EXCEEDED IN TWO DIFFERENT  
MAINTENANCE EVENTS. INSTALLATION PROBLEMS, WHICH  
COULD BE AVOIDED IN FUTURE PROGRAMS, ARE CONSIDERED  
THE MAIN CAUSE FOR THE ONE CRITICAL SYSTEM FAILURE  
AND THE MAXIMUM REPAIR TIME OF 6 HOURS. THE ODOR OF  
THE WATER VAPOR RELEASED FROM THE VENT STACK IS THE  
PRINCIPAL USER OBJECTION TO THE SYSTEM.  
RECOMMENDATIONS ARE MADE ON WAYS TO IMPROVE THE  
RELIABILITY, MAINTAINABILITY, HABITABILITY, AND  
PERFORMANCE OF THE GENERAL AMERICAN

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A030 057 13/2 6/12  
ABCOR INC WILMINGTON MASS WALDEN RESEARCH DIV

EVALUATION OF MEMBRANE SEPARATION PROCESSES,  
CARBON ADSORPTION, AND OZONATION FOR  
TREATMENT OF MUST HOSPITAL WASTES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 76 456P GOLLAN, ARYE Z. ;MCNULTY,  
KENNETH J. ;GOLDSMITH, ROBERT L. ;KLEPER, MYLES  
H. ;GRANT, DONALD C. ;  
CONTRACT: DAMD-17-74-C-4066

UNCLASSIFIED REPORT

DESCRIPTORS: \*WASTE TREATMENT, \*OZONATION,  
\*CHLORINATION, \*REVERSE OSMOSIS, \*ULTRAFILTRATION,  
\*WASTE DISPOSAL, \*HOSPITALS, WASTE RECYCLING,  
BRACKISH WATER, WASTES(SANITARY ENGINEERING),  
FIELD EQUIPMENT, ARMY EQUIPMENT, WATER  
TREATMENT

(U)

IDENTIFIERS: MEMBRANE SEPARATION, \*CARBON  
ADSORPTION, \*WASTE EQUALIZATION, MUST  
HOSPITALS

(U)

THE LONG RANGE OBJECTIVE OF THIS PROGRAM IS THE  
DEVELOPMENT OF A COMPACT 4000 GALLON-PER-DAY WASTE  
TREATMENT SYSTEM TO PROCESS NON-SANITARY WASTES  
(SHOWER, OPERATING ROOM, KITCHEN, LABORATORY, X-  
RAY, AND LAUNDRY) FROM THE OPERATION OF A MUST  
ARMY FIELD HOSPITAL. THE SYSTEM IS TO BE CAPABLE  
OF OPERATING IN EITHER OF TWO MODES: (1) WASTE  
TREATMENT FOR 'REUSE' WITHIN THE HOSPITAL COMPLEX,  
AND (2) 'WASTE TREATMENT' FOR DISCHARGE TO THE  
ENVIRONMENT WITH SIMULTANEOUS 'WATER TREATMENT',  
I.E., DESALINATION OF BRACKISH WATER FOR USE WITHIN  
THE HOSPITAL COMPLEX. QUALITY SPECIFICATIONS FOR  
ALL PROCESSED STREAMS AND DESIGN SPECIFICATIONS FOR  
THE OVERALL SYSTEM (OUTPUT CAPACITY, POWER, WEIGHT,  
VOLUME, ETC.) HAVE BEEN ESTABLISHED BY THE ARMY.  
THE SEQUENCE OF UNIT PROCESSES SELECTED FOR  
EVALUATION FOR THE 'REUSE' MODE WAS: WASTE  
EQUALIZATION, ULTRAFILTRATION (UF), REVERSE OSMOSIS  
(RO), CARBON ADSORPTION, OZONATION (O3), AND  
CHLORINATION (CL2). EACH OF THESE UNIT  
PROCESSES (EXCEPT CHLORINATION) WAS EVALUATED  
INDEPENDENTLY, USING SIMULATED INDIVIDUAL AND  
COMPOSITE MUST HOSPITAL WASTES TO DETERMINE THE  
OVERALL EFFECTIVENESS OF EACH AND TO SELECT PREFERRED  
PROCESS OPTIONS AND OPERATING CONDITIONS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A030 615 13/2  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

EFFECT ON EMISSIONS OF PARTICULATES,  
HYDROCARBONS, NITROGEN OXIDES, LEAD, AND  
IRON FROM USING WASTE POL AS A SUPPLEMENT  
TO HEATING PLANT FUEL. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 75 24P JACKSON, JERRY W. ; GOKELMAN,  
JOHN J. ; NORMINGTON, WILLIAM E. ;  
REPT. NO. EHL-M-76M-12  
PROJ: EHL-M-AAF-339

UNCLASSIFIED REPORT

DESCRIPTORS: \*EMISSION, \*WASTE RECYCLING,  
\*PETROLEUM PRODUCTS, \*HEATING PLANTS, \*SMOKE  
STACKS, \*RECYCLED MATERIALS, AIR FORCE FACILITIES,  
FUEL OIL, LUBRICANTS, RATIOS, EMISSION CONTROL,  
PARTICULATES, HYDROCARBONS, NITROGEN OXIDES,  
LEAD(METAL), IRON, ENERGY MANAGEMENT,  
WASTES(INDUSTRIAL), AIR POLLUTION, POLLUTION  
ABATEMENT (U)

STACK EMISSION TESTS WERE CONDUCTED AT THREE AIR  
FORCE HEATING PLANTS TO DETERMINE THE EFFECT ON  
STACK EMISSIONS RESULTING FROM THE USE OF AIR  
FORCE WASTE PETROLEUM FUELS AND LUBRICATING OILS  
(POL) AS A SUPPLEMENT TO HEATING PLANT FUEL.  
PARTICULATE EMISSIONS WERE UNAFFECTED BY (1)  
11% WASTE POL (BY VOLUME) WITH 89% NO. 5  
FUEL OIL AND (2) 4% WASTE POL WITH 96% NO.  
2 FUEL OIL. PARTICULATE EMISSIONS WERE INCREASED BY  
(1) 16% WASTE POL WITH 84% NO. 2 FUEL OIL  
AND (2) 16% WASTE POL WITH 84% (BY HEAT  
CONTENT) NATURAL GAS. HYDROCARBON AND NITROGEN  
OXIDE EMISSIONS WERE UNAFFECTED BY ANY PERCENTAGE OF  
WASTE POL UP TO 26% BY VOLUME. LEAD EMISSIONS  
WERE INCREASED BY ALL PERCENTAGES OF WASTE POL  
EXCEPT IN ONE TEST WHEN ONLY 2% WASTE WAS USED.  
EMISSION CODES WERE NOT VIOLATED BY THE USE OF  
WASTE POL IN ANY TESTS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A031 581 13/2 8/10  
INTER-GOVERNMENTAL MARITIME CONSULTATIVE ORGANIZATION  
LONDON (ENGLAND)

REPORT OF THE SYMPOSIUM ON PREVENTION OF  
MARINE POLLUTION FROM SHIPS HELD IN  
ACAPULCO, MEXICO 22-31 MARCH 1976.

(U)

APR 76 1437P  
MONITOR: USCG WEP-1-77

UNCLASSIFIED REPORT

DESCRIPTORS: \*WATER POLLUTION, \*POLLUTION ABATEMENT;  
\*SYMPOSIA, SHIP DESIGN, OIL POLLUTION, SHIPBOARD  
SEWAGE TREATMENT SYSTEMS, HAZARDOUS MATERIALS  
TRANSPORTATION, INTERNATIONAL RELATIONS, MONITORING,  
OIL SPILLS, SEPARATORS, BALLAST TANKS, OCEAN  
WASTE DISPOSAL, OCEAN ENVIRONMENTS, INFORMATION  
SYSTEMS, ACCIDENTS, TANKERS, HARBORS, WASTE  
DISPOSAL, CHEMICALS, GREAT LAKES, REMOTE  
DETECTORS, LABELED SUBSTANCES

(U)

CONTENTS: GENERAL REVIEW OF THE 1973  
CONVENTION, NATIONAL AND REGIONAL  
ARRANGEMENTS; CONSTRUCTION, EQUIPMENT AND  
OPERATION OF CHEMICAL TANKERS; SEGREGATED  
BALLAST TANKERS; OILY-WATER SEPARATORS AND  
OIL MONITORING AND CONTROL EQUIPMENT;  
OPERATION OF OIL TANKERS; RECEPTION  
FACILITIES IN PORTS; SEWAGE AND GARBAGE FROM  
SHIPS; CONTINGENCY PLANNING; MEASURES FOR  
CONTROL, DETECTION AND DATA COLLECTION; AND  
METHODS FOR DEALING WITH SPILLAGES.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM09

AD-A032 727 13/2 6/11  
ARMY NATICK RESEARCH AND DEVELOPMENT COMMAND MASS

PREVENTION OF FOOD RESIDUE SPOILAGE IN  
WASTE PACKAGING FROM FEEDING SYSTEMS  
UTILIZED BY PERSONNEL OPERATING IN A CLOSED  
GASEOUS ENVIRONMENT REQUIREMENT NUMBER AF  
4-12.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 26 SEP 73-26 SEP 75,  
NOV 75 56P ROGERS, MORRIS R. ; KAPLAN,  
ARTHUR M. ; VITALIANO, JOSEPH J. ; PILLION,  
ELIZABETH ;  
REPT. NO. NARADCOM-TR-76-44-FSL  
PROJ: 1Y762724AH99  
TASK: BD

UNCLASSIFIED REPORT

DESCRIPTORS: \*WASTE DISPOSAL, \*SANITARY ENGINEERING,  
\*LIFE SUPPORT SYSTEMS, SANITATION, SODIUM  
CHLORIDE, DISINFECTION, FOOD SERVICE, FOOD  
PRESERVATION, WASTES (SANITARY ENGINEERING),  
COMPACTING, GERMICIDES, PHENOLS  
IDENTIFIERS: PROPYLENE GLYCOL, WU003,  
PE62724A, ASH99

(U)

(U)

UNDER CERTAIN MILITARY REQUIREMENTS, PERSONNEL ARE  
REQUIRED TO LIVE FOR EXTENDED PERIODS IN CLOSED  
GASEOUS ENVIRONMENTS. FOOD WASTES AND TRASH  
PRODUCED UNDER THESE ENVIRONMENTS CAN NOT BE DISPOSED  
OF IN THE USUAL MANNER. IT WAS DETERMINED THAT  
LIMITED QUANTITIES OF FOOD WASTE AND TRASH MAY BE  
COMPACTED AND PRESERVED AGAINST GAS AND ODOR  
PRODUCTION FOR UP TO 30 DAYS STORAGE AT ROOM  
TEMPERATURE. SEVERAL DISINFECTANTS WERE EVALUATED  
AS PRESERVATIVES. THE ADDITION OF SALT TO THE FOOD  
WASTES AND TRASH PRIOR TO COMPACTION PROVED TO BE  
SIMPLE, INEXPENSIVE AND AN EFFECTIVE WAY OF PREVENTING  
ODOR AND GAS PRODUCTION OF THE COMPACTED WASTE DURING  
A 30 DAY INCUBATION PERIOD UNDER LABORATORY TEST  
CONDITIONS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A033 223 13/2  
CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILL

WATER/WASTEWATER SURVEY GUIDELINES. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 76 59P SCHANCHE, GARY W. ; GREEP,  
LARRY A. ; DONAHUE, BERNARD A. ; CANNON, JOHN  
R. ;

REPT. NO. CERL-TR-N-11  
PROJ: 4A162121A896  
TASK: 01

UNCLASSIFIED REPORT

DESCRIPTORS: \*WATER POLLUTION, \*WASTE WATER,  
\*SURVEYS, PLANNING, REGULATIONS, SOURCES,  
WATER, WATER QUALITY, SAMPLING,  
WASTES (INDUSTRIAL) (U)  
IDENTIFIERS: WU004, AS896, PE62121A (U)

THIS REPORT--ONE OF A SERIES OF THREE WHICH SUPPLY  
THE MEANS FOR GATHERING BACKGROUND DATA ON SOLID  
WASTE, AIR, AND WATER/WASTEWATER--PROVIDES ASSISTANCE  
IN PLANNING AND PERFORMING WATER/WASTEWATER SURVEYS.  
IT PROVIDES THE FORMAT FOR PLANNING AN APPROPRIATE  
SURVEY GIVEN A SPECIFIC NEED FOR DATA. THE TYPES OF  
SURVEYS COVERED INCLUDE REGIONAL AND INSTALLATION  
SURVEYS DESIGNED TO GATHER BACKGROUND INFORMATION,  
AND REGULATION COMPLIANCE, WASTE SOURCE EVALUATION,  
AND AMBIENT WATER QUALITY EVALUATION SURVEYS, WHICH  
PROVIDE INFORMATION FOR REGULATION COMPLIANCE  
INQUIRIES, ENVIRONMENTAL IMPACT ANALYSES, PROBLEM  
CHARACTERIZATIONS, AND DESIGN ANALYSES.  
ADDITIONALLY, THE REPORT PROVIDES BACKGROUND  
INFORMATION ON PERFORMING MASS BALANCES, DEVELOPING  
SAMPLING SCHEDULES, SELECTING SAMPLING POINTS,  
EVALUATING WASTEWATER SOURCES, AND TAKING FLOW  
MEASUREMENTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A033 469 13/2 7/3 15/2  
EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

DEMILITARIZATION OF CS. I. CHEMICAL  
DISPOSAL OF CS BY HYDROLYSIS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. JUN 72-SEP 75,  
DEC 76 13P BROOKS, MARGUERITE E. ; DAVIS,  
PAUL M. ; SASS, SAMUEL ;  
REPT. NO. EC-TR-76078  
PROJ: DA-1-W-062116-AD-1002

UNCLASSIFIED REPORT

DESCRIPTORS: \*CS AGENTS, \*CHEMICAL WARFARE AGENTS,  
MATERIALS RECOVERY, WATER POLLUTION, HYDROLYSIS,  
CHLORINE COMPOUNDS

(U)

IDENTIFIERS: WASTE DISPOSAL, \*LIQUID WASTE  
DISPOSAL, \*DEMILITARIZATION, BENZALDEHYDE/CHLORO,  
INDUSTRIAL WASTES

(U)

A SIMPLE, EFFECTIVE CHEMICAL DISPOSAL METHOD FOR  
CS, SUITABLE FOR PLANT SCALE AND YIELDING A SALABLE  
PRODUCT, HAS BEEN DEVELOPED. THE RECOMMENDED  
REACTION IS AQUEOUS ALKALINE HYDROLYSIS OF CS TO O-  
CHLOROBENZALDEHYDE. IN THE SYSTEM DEVELOPED, THE  
REACTION GOES RAPIDLY TO GIVE EASILY SEPARATED, HIGH  
PURITY O-CHLOROBENZALDEHYDE, WITH YIELDS OF 70% TO  
75%.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A033 864 13/2  
ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG  
MISS

HIGHLIGHTS OF RESEARCH ON OVERLAND FLOW FOR  
ADVANCED TREATMENT OF WASTEWATER.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 76 26P LEE, CHARLES R. ; HUNT,  
PATRICK G. ; HOEPEL, RONALD E. ; CARLSON,  
CHARLES A. ; DELANEY, THOMAS B. , JR;  
REPT. NO. WES-MP-Y-76-6

UNCLASSIFIED REPORT

DESCRIPTORS: \*WASTE TREATMENT, \*WASTE WATER,  
\*WATER TREATMENT, SANITARY ENGINEERING, EFFLUENTS,  
NITROGEN, PHOSPHORUS, WASTES (INDUSTRIAL),  
WATER QUALITY, WATER POLLUTION, SOIL TESTS,  
PERMEABILITY, MODELS, HEAVY METALS, URBAN AREAS,  
WATER FLOW, WATER POLLUTION, HYDRAULIC MODELS  
IDENTIFIERS: WASTE WATER TREATMENT

(U)

(U)

OVERLAND FLOW TREATMENT OF MUNICIPAL WASTEWATER WAS  
STUDIED IN GREENHOUSE GRASS-SOIL MODELS. THE  
RESPONSE OF OVERLAND FLOW TREATMENT OF NITROGEN,  
PHOSPHORUS, AND HEAVY METALS TO VARIOUS OPERATING  
CONDITIONS WAS DETERMINED. NITROGEN REMOVAL FROM  
APPLIED WASTEWATER WAS EXCEPTIONALLY EFFICIENT, WITH  
BEST REMOVAL BEING OBTAINED WHENEVER THE APPLIED  
WASTEWATER WAS ALLOWED SUFFICIENT TIME TO INTERACT  
WITH THE COMPONENTS OF THE OVERLAND FLOW SYSTEM.  
SUFFICIENT TIME FOR ADEQUATE TREATMENT OF  
WASTEWATER COULD BE OBTAINED BY INCREASING THE  
APPLICATION PERIOD FROM 6 TO 18 HR, BY DECREASING THE  
AMOUNT OF APPLIED WASTEWATER FROM 1 TO 1/2 IN./ACRE,  
BY DECREASING THE SLOPE OF APPLICATION SURFACE FROM 8  
TO 2 PERCENT, OR BY COMBINATIONS THEREOF. GREATER  
THAN 90 PERCENT NITROGEN AND HEAVY METAL REMOVAL  
COULD BE OBTAINED DURING OVERLAND FLOW TREATMENT.  
GENERALLY, 80 PERCENT OF THE APPLIED PHOSPHORUS WAS  
REMOVED WITH OVERLAND FLOW TREATMENT. UP TO 98  
PERCENT PHOSPHORUS REMOVAL COULD BE OBTAINED BY  
ADDITION OF STOICHIOMETRIC AMOUNTS OF ALUMINUM  
SULFATE TO THE WASTEWATER PRIOR TO LAND TREATMENT.  
NITROGEN, PHOSPHORUS, AND HEAVY METALS WERE FOUND  
TO ACCUMULATE ON THE SOIL SURFACE IN THE ORGANIC MAT  
WITH LITTLE MOVEMENT INTO LOWER SOIL DEPTHS. HEAVY  
METALS ACCUMULATED ON THE SOIL SURFACE NEAREST THE  
POINT OF WASTEWATER APPLICATION.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A035 136 13/2 19/1 11/7  
PICATINNY ARSENAL DOVER N J

COMPATIBILITY OF FLOCCULATING AGENTS WITH  
RDX/TNT/COMP B.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,  
JAN 77 12p CASTORINA, THOMAS C. ;  
MCCAHERILL, JAMES W. ; FORSYTH, ARTHUR C. ;  
REPT. NO. PA-TM-2224

UNCLASSIFIED REPORT

DESCRIPTORS: \*ETHYLENEIMINES, \*POLYMERS, RDX,  
EXPLOSIVES, TNT, COMPATIBILITY,  
WASTES(INDUSTRIAL), WATER POLLUTION,  
COPOLYMERS, POLYELECTROLYTES, POLYACRYLAMIDES

(U)

IDENTIFIERS: \*WATER POLLUTION CONTROL,  
\*FLOCCULANTS, \*AMMONIUM CHLORIDE/DIMETHYL-DIALLYL,  
WT-2635 FLOCCULATING AGENTS, WT-2600 FLOCCULATING  
AGENT, CAT-FLOC FLOCCULATING AGENT, COMP B,  
E-653 FLOCCULATING AGENT, ACRYLAMIDE COPOLYMERS

(U)

THIS STUDY WAS UNDERTAKEN AT THE REQUEST OF THE  
TOOELE ARMY AMMUNITION DEPOT (TAAD) TO  
DETERMINE THE COMPATIBILITY OF POLYMER FLOCCULATING  
AGENTS WITH EXPLOSIVES PRESENT IN WASTE WATERS AT  
ARMY AMMUNITION PLANTS. THESE AGENTS ARE USED  
EFFECTIVELY FOR THE REMOVAL OF THE SUSPENDED MATTER  
IN AQUEOUS MEDIA. AS SUCH, THEY COULD SERVE TO  
REMOVE COLLOIDAL SUSPENSIONS OF EXPLOSIVES WHICH CLOG  
THE CHARCOAL FILTERS THAT ARE USED TO ADSORB  
SOLUBILIZED EXPLOSIVES FROM WASTE WATER EFFLUENTS.  
BEFORE THESE FLOCCULATING AGENTS CAN BE ACCEPTED AS  
STANDARD ITEMS FOR THE PRE-TREATMENT OF WASTE WATER  
EFFLUENTS AT EXPLOSIVES PROCESSING PLANTS, THEIR  
COMPATIBILITY WITH EXPLOSIVES IN THE DRY STATE MUST  
BE ESTABLISHED. OF THE FLOCCULATING AGENTS,  
WT2600, CAT-FLOC, CAT-FLOC-T, AND E-  
653, TESTED FOR THEIR COMPATIBILITY WITH RDX, TNT  
AND COMP B, ONLY E-653 WAS FOUND TO BE  
ACCEPTABLE. A POSSIBLE MECHANISM IS PROPOSED FOR  
THE REACTIVITY OF THE POLYMER FLOCCULATING AGENTS  
WITH EXPLOSIVES.

(U)

AD-A041 950

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA  
ENVIRONMENTAL POLLUTION: SANITARY ENGINEERING AND INDUSTRIAL WA--ETC(U)  
JUL 77

F/G 13/2

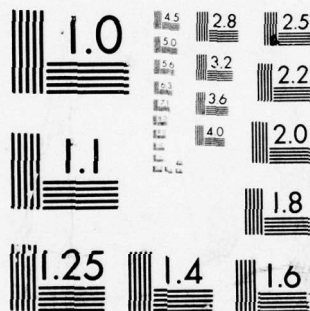
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AD  
A041950





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 132 13/2 19/1  
NAVAL WEAPONS SUPPORT CENTER CRANE IND WEAPONS QUALITY  
ENGINEERING CENTER

THE EFFECTS OF UV LIGHT ON TNT AND OTHER  
EXPLOSIVES IN AQUEOUS SOLUTION, (U)

JAN 77 64P ANDREWS, CATHERINE C. ; OSMON,  
JERALD L. ;  
REPT. NO. WQEC/C-77-32

UNCLASSIFIED REPORT

DESCRIPTORS: \*EXPLOSIVES, \*WATER POLLUTION,  
\*POLLUTION ABATEMENT, \*WATER TREATMENT,  
ULTRAVIOLET RADIATION, HYDROGEN PEROXIDE,  
MUNITIONS INDUSTRY, TNT, RDX, HMX, DNT,  
AMMONIUM PICRATE, WASTES(INDUSTRIAL),  
DEGRADATION, PHOTOCHEMICAL REACTIONS, ACETONES (U)

THE ROLE OF EACH OF FOUR BENCH-SCALE UV SYSTEMS  
IN THE TREATMENT OF AQUEOUS EXPLOSIVE SOLUTIONS IS  
DISCUSSED. STUDIES RELATING THE EFFECTS OF ACETONE  
AND H2O2 IN THE TREATMENT ARE REVIEWED. UNDER  
GIVEN CONDITIONS, UV LIGHT (254 NM) IN  
CONJUNCTION WITH SMALL CONCENTRATIONS OF H2O2  
RESULTS IN THE ELIMINATION OF SUCH EXPLOSIVES AS  
TNT (ALPHA TRINITRO-TOLUENE), RDX  
(CYCLONITE), HMX (HOMOCYCLONITE), 2,4 DNT  
(DINITROTOLUENE), 2,6 DNT AND EXPLOSIVE D  
(AMMONIUM PICRATE) FROM THEIR AQUEOUS SOLUTIONS.  
ANALYSES HAVE SHOWN THAT EXPLOSIVE DISAPPEARANCE IS  
ACCOMPANIED BY A DECREASE IN TOC AFTER ONE HOUR OF  
EXPOSURE. NO SIGNIFICANT CONCENTRATIONS OF ANY  
RELATED CONVERSION PRODUCTS WERE DETECTED IN THE ONE  
HOUR PHOTOLYSATES. STUDIES INCORPORATING 1,3,5  
LABELED C14-TNT HAVE INDICATED THAT THE TNT  
MOLECULE IS CLEAVED AND CONVERTED TO C(14)O2 UPON  
SUCH TREATMENT. UV TREATMENT OF BOMB-LOADING  
EFFLUENTS CONTAINING 221 PPM TNT AND 148 PPM RDX  
SUCCESSFULLY RESULTED IN THE ELIMINATION OF THESE  
EXPLOSIVES AND THEIR CONVERSION PRODUCTS.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-AD36 657 15/2 13/2 8/7  
GO CHEM INC ARKADELPHIA ARK

METHODS FOR ANALYSIS OF CONTAMINATED SOIL.  
PINE BLUFF ARSENAL, PINE BLUFF, ARKANSAS  
MARCH 1976. (U)

DESCRIPTIVE NOTE: CONTRACTOR REPT. JUL 74-MAR 76,  
MAR 76 74P GOSNELL, AUBREY B. ;  
CONTRACT: DAAA15-75-C-0183, DAAA15-74-C-0213  
MONITOR: EC CR-76064

UNCLASSIFIED REPORT

DESCRIPTORS: \*SOILS, \*CONTAMINATION, \*CHEMICAL  
ANALYSIS, \*WASTES(INDUSTRIAL), \*CHEMICAL WARFARE  
AGENTS, SOIL TESTS, POLLUTANTS, CHEMICALS,  
MILITARY FACILITIES, MUNITIONS INDUSTRY, SAMPLING,  
BIOASSAY (U)  
IDENTIFIERS: PINE BLUFF ARSENAL (U)

THE METHODS FOR THE ANALYSIS OF CONTAMINATED SOIL  
WERE DESIGNED FOR AND UTILIZED TO SURVEY THE AREAS OF  
PINE BLUFF ARSENAL THOUGHT TO BE CONTAMINATED  
BY VARIOUS CHEMICALS MANUFACTURED, STORED, OR USED AT  
PINE BLUFF ARSENAL. THESE METHODS WERE  
CONSISTENT WITH THE CURRENT STATE OF THE ART AND WERE  
UTILIZED SO AS TO YIELD THE MAXIMUM INFORMATION AS TO  
LOCATION, CONCENTRATION AND IDENTITY OF THE  
CONTAMINANTS. THEIR UTILITY WAS BEST SHOWN BY THE  
VOLUME OF SAMPLES ANALYZED BY THE PERSONNEL OF PINE  
BLUFF ARSENAL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 776 13/2 6/6 19/1  
ENVIRONMENTAL CONTROL TECHNOLOGY CORP ANN ARBOR MICH

AQUATIC FIELD SURVEYS AT IOWA, RADFORD AND  
JOLIET ARMY AMMUNITION PLANTS. VOLUME I.  
IOWA ARMY AMMUNITION PLANT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 76 418P SANOCKI, S. L. ; SIMON, P.  
B. ; WEITZEL, R. L. ; JERGER, D. E. ; SCHENK,  
J. E. ;  
CONTRACT: DAMD17-75-C-5046

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A036  
777.

DESCRIPTORS: \*WATER POLLUTION, \*WASTE WATER, \*TNT,  
INDUSTRIAL PLANTS, MILITARY FACILITIES, ARMY,  
IOWA, STREAMS, WATER CHEMISTRY, AQUATIC  
ORGANISMS, FIELD TESTS, AMMUNITION, MANUFACTURING,  
EFFLUENTS, ENVIRONMENTAL PROTECTION, CORRELATION  
TECHNIQUES, WASTES(INDUSTRIAL), HEAVY METALS,  
DNT, AQUATIC PLANTS, INVERTEBRATES, BENTHOS,  
SEDIMENTS, WATER QUALITY, MONITORING

(U)

IDENTIFIERS: \*IOWA ARMY AMMUNITION PLANT,  
ENVIRONMENTAL DATA, PERIPHYTON

(U)

THIS REPORT DESCRIBES THE METHODOLOGY AND RESULTS  
OF AN AQUATIC FIELD SURVEY CONDUCTED AT THE IOWA  
ARMY AMMUNITION PLANT (IAAP) DURING 1975.  
THE PURPOSE OF THIS STUDY WAS TO ESTABLISH THE  
BIOLOGICAL AND CHEMICAL IMPACTS OF THE DISCHARGES OF  
A MUNITIONS LOAD/ASSEMBLY/PACK (LAP) FACILITY.  
THE MOST SIGNIFICANT MUNITIONS COMPONENT HANDLED AT  
THIS FACILITY IS TRINITROTOLUENE (TNT). THE  
IAAP IS LOCATED TEN MILES WEST OF BURLINGTON,  
IOWA. THREE STREAMS ORIGINATE ON, OR PASS  
THROUGH, THE PLANT PROPERTY. BRUSH CREEK  
ORIGINATES ON PLANT PROPERTY AND RECEIVES THE  
GREATEST INPUT OF TREATED WASTEWATER DISCHARGES.  
CONSEQUENTLY, THIS STREAM RECEIVED THE PRIMARY  
INTEREST DURING THE STUDY. TWO FIELD SURVEYS WERE  
CONDUCTED, ONE DURING THE SPRING PERIOD (19-27  
JUNE), AND THE OTHER DURING THE FALL (6-16  
OCTOBER).

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 777 13/2 6/6 19/1  
ENVIRONMENTAL CONTROL TECHNOLOGY CORP ANN ARBOR MICH

AQUATIC FIELD SURVEYS AT IOWA, RADFORD, AND  
JOLIET ARMY AMMUNITION PLANTS. VOLUME II.  
RADFORD ARMY AMMUNITION PLANT.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 MAR 75-29 FEB 76,  
MAR 76 469P WEITZEL, R. L. ; EISENMAN, R.  
; SCHENK, J. E. ;  
CONTRACT: DAMD17-75-C-5046

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 3, AD-A036  
779.

DESCRIPTORS: \*WATER POLLUTION, \*WASTE WATER,  
\*NITROGLYCERIN, INDUSTRIAL PLANTS, MILITARY  
FACILITIES, ARMY, VIRGINIA, MANUFACTURING,  
AMMUNITION, EFFLUENTS, RIVERS, WATER CHEMISTRY,  
AQUATIC ORGANISMS, INVERTEBRATES, BENTHOS, FIELD  
TESTS, AQUATIC PLANTS, SEDIMENTS, HEAVY METALS,  
WASTES (INDUSTRIAL), WATER QUALITY, MONITORING,  
ENVIRONMENTAL PROTECTION, CORRELATION TECHNIQUES

(U)

IDENTIFIERS: \*RADFORD ARMY AMMUNITION PLANT,  
ENVIRONMENTAL DATA, NEW RIVER (VIRGINIA),  
PERIPHYTON, DIPHENYLAMINE/NITRO

(U)

TWO AQUATIC FIELD SURVEYS WERE CARRIED OUT DURING  
1975 AT THE RADFORD ARMY AMMUNITION PLANT IN  
RADFORD, VIRGINIA. ONE SURVEY WAS CONDUCTED  
DURING THE SPRING PERIOD (15-20 MAY) AND THE  
OTHER DURING THE FALL (30 OCTOBER-4  
NOVEMBER). SAMPLES WERE COLLECTED FROM THE  
NEW RIVER IN THE VICINITY OF THE NITROGLYCERIN  
NO. 2 AREA TO ALLOW FOR THE EVALUATION OF THE SPECIES  
DIVERSITY AND DISTRIBUTION OF PERIPHYTON AND BENTHIC  
MACROINVERTEBRATES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 778 13/2 6/6 19/1 6/13  
ENVIRONMENTAL CONTROL TECHNOLOGY CORP ANN ARBOR MICH

AQUATIC FIELD SURVEYS AT IOWA, RADFORD, AND  
JOLIET ARMY AMMUNITION PLANTS. VOLUME  
III. MICROBIOLOGICAL INVESTIGATIONS, IOWA  
AND JOLIET ARMY AMMUNITION PLANTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 76 153P JERGER, D. E. ; SIMON, P.  
B. ; WITZEL, R. L. ; SCHENK, J. E. ;  
CONTRACT: DAMD17-75-C-5046

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME I, AD-A036  
776.

DESCRIPTORS: \*WATER POLLUTION, \*WASTE WATER,  
AQUATIC ORGANISMS, MICROORGANISMS, TNT,  
INDUSTRIAL PLANTS, MILITARY FACILITIES, ARMY,  
IOWA, ILLINOIS, MANUFACTURING, AMMUNITION,  
EFFLUENTS, VOLUME, STREAMS, WATER CHEMISTRY,  
SEDIMENTS, WATER QUALITY, WASTES (INDUSTRIAL),  
WASTES (SANITARY ENGINEERING), TOXIC TOLERANCES,  
THRESHOLDS (PHYSIOLOGY), BACTERIA,  
BIODETERIORATION

(U)

IDENTIFIERS: IOWA ARMY AMMUNITION PLANT,  
JOLIET ARMY AMMUNITION PLANT, ENVIRONMENTAL  
DATA

(U)

THIS REPORT DESCRIBES THE METHODOLOGY AND RESULTS  
OF MICROBIOLOGICAL FIELD AND LABORATORY STUDIES  
CONDUCTED AT THE IOWA AND JOLIET ARMY  
AMMUNITION PLANTS DURING 1975. THE PURPOSE OF  
THIS STUDY WAS TO ESTABLISH THE IMPACT OF  
MICROORGANISMS IN DETERMINING THE ENVIRONMENTAL FATE  
OF TNT WASTEWATER IN RECEIVING STREAMS. AN  
ATTEMPT WAS MADE TO DEFINE THRESHOLD TOXICITY LEVELS  
AND RELATIVE RATES OF TNT TRANSFORMATION IN STREAMS  
RECEIVING LOW VOLUME WASTE DISCHARGES (IAAP) VERSUS  
STREAMS RECEIVING HIGH VOLUME WASTE DISCHARGES  
(JAAP).

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 792 13/2 5/1  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR-EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. SUMMARY  
REPORT.

(U)

MAR 76 32P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ORIGINAL CONTAINS COLOR PLATES;  
ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE. SEE  
ALSO VOLUME 1, AD-A036 793.

DESCRIPTORS: \*WASTE MANAGEMENT, \*SANITARY  
ENGINEERING, \*WASTE WATER, WATER POLLUTION  
ABATEMENT, SEWAGE TREATMENT, SEWAGE DISPOSAL,  
POLLUTANTS, URBAN AREAS, ECONOMIC ANALYSIS, COST  
ANALYSIS, INDUSTRIAL PLANTS, WASTES(INDUSTRIAL),  
PUBLIC UTILITIES, WATER POLLUTION CONTROL EQUIPMENT,  
MASSACHUSETTS, REGULATIONS, STATE LAW, LAND  
AREAS

(U)

IDENTIFIERS: BOSTON HARBOR, DEER ISLAND  
TREATMENT PLANT, NUT ISLAND TREATMENT PLANT

(U)

THE INTENSIVE INTER-AGENCY STUDY ADDRESSING METHODS  
FOR COMBATTING POLLUTION IN THE BOSTON HARBOR-  
EASTERN MASSACHUSETTS METROPOLITAN AREA  
(EMMA) AND VITALLY AFFECTING THE METROPOLITAN  
SEWERAGE DISTRICT (MSD), BEGUN THREE YEARS AGO,  
HAS BEEN COMPLETED. THIS SUMMARY REPORT  
PROVIDES A CAPSULE OF THE MORE SIGNIFICANT ASPECTS OF  
THE STUDY AND DESCRIBES THE STUDY RECOMMENDATIONS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 793 13/2 5/1  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR-EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 1. PLANNING CRITERIA.

(U)

OCT 75 323P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A036  
794.

DESCRIPTORS: \*WASTE MANAGEMENT, \*SANITARY  
ENGINEERING, \*WASTE WATER, MANAGEMENT PLANNING AND  
CONTROL, URBAN AREAS, WATER POLLUTION ABATEMENT,  
SEWAGE TREATMENT, SEWAGE DISPOSAL, POPULATION,  
ECONOMIC ANALYSIS, REGULATIONS, MASSACHUSETTS,  
COST ANALYSIS, PUBLIC UTILITIES, LAND USE

(U)

IDENTIFIERS: BOSTON HARBOR, EASTERN  
MASSACHUSETTS METROPOLITAN AREA

(U)

THIS REPORT COVERS THE DEVELOPMENT OF PLANNING DATA  
FOR PROJECTING SEWERAGE NEEDS IN THE EMMA AREA.  
MORE SPECIFICALLY, PROJECTIONS OF POPULATION,  
EMPLOYMENT, AND LAND USE FOR 1990, 2000, 2020, AND  
2050 FOR EACH COMMUNITY AND SELECTED SUBDIVISIONS IS  
MADE. THESE IN TURN WILL BE USED TO ESTIMATE FUTURE  
WASTEWATER CONTRIBUTIONS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 794 13/2 5/1  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR-EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 2. ENGINEERING CRITERIA.

(U)

OCT 75 142P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 3, AD-A036  
795.

DESCRIPTORS: \*WASTE MANAGEMENT, \*SANITARY  
ENGINEERING, \*WASTE WATER, MANAGEMENT PLANNING AND  
CONTROL, URBAN AREAS, POPULATION, ECONOMIC  
ANALYSIS, WATER POLLUTION ABATEMENT, SEWAGE  
TREATMENT, SEWAGE DISPOSAL, PIPING SYSTEMS, WATER  
FLOW, RAINFALL, WASTES(SANITARY ENGINEERING),  
WATER RESOURCES

(U)

IDENTIFIERS: \*BOSTON HARBOR, WATER CONSUMPTION,  
DEER ISLAND TREATMENT PLANT, NUT ISLAND  
TREATMENT PLANT, EASTERN MASSACHUSETTS  
METROPOLITAN AREA

(U)

THIS REPORT COVERS THE ENGINEERING CRITERIA USED IN  
THE PROJECT INCLUDING THE BASES OF ESTIMATING  
WASTEWATER FLOWS, SEWERAGE NEEDS, AND COSTS.  
PROJECTIONS OF SEWERAGE NEEDS AND WASTEWATER FLOWS  
ARE MADE FOR EACH COMMUNITY. SEVERAL COMMUNITIES,  
HOWEVER, HAVE BEEN BROKEN DOWN INTO SMALLER  
SUBDIVISIONS IN ORDER TO MORE ACCURATELY REPRESENT  
THEIR EFFECT ON THE MDC SEWERAGE SYSTEM. THESE  
ARE BROOKLINE, MILTON, NEWTON, AND  
BOSTON.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 795 13/2 5/1  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR-EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 3. INDUSTRIAL PROCESS  
WASTEWATER ANALYSIS AND REGULATION.

(U)

OCT 75 62P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 3A, AD-A036  
796.

DESCRIPTORS: \*WASTE MANAGEMENT, \*SANITARY  
ENGINEERING, \*WASTE WATER, SEWAGE TREATMENT,  
WASTES(INDUSTRIAL), SEWAGE DISPOSAL, URBAN  
AREAS, WATER POLLUTION ABATEMENT, MANAGEMENT  
PLANNING AND CONTROL, TAXES, COST ESTIMATES,  
FINANCE, REGULATIONS, STATE LAW, MASSACHUSETTS,  
FEDERAL LAW, INDUSTRIAL PLANTS

(U)

IDENTIFIERS: BOSTON HARBOR, WATER CONSUMPTION,  
EASTERN MASSACHUSETTS METROPOLITAN AREA

(U)

THE PURPOSE OF THIS TECHNICAL DATA VOLUME IS  
TO DEVELOP AND PRESENT THE FORMULATION OF UPDATED  
RULES AND REGULATIONS FOR INDUSTRIAL WASTES  
DISCHARGED TO THE BOSTON METROPOLITAN DISTRICT  
SEWERAGE SYSTEM WHICH WILL CONFORM TO CURRENT  
FEDERAL AND STATE REQUIREMENTS, WITH ENOUGH  
FLEXIBILITY FOR ADAPTATION TO FUTURE CHANGES. A  
REVIEW OF CURRENT LEGISLATION ON THE BASIS OF CHARGES  
FOR WASTEWATER DISPOSAL IS INCLUDED TO INSURE  
COMPLIANCE WITH FEDERAL AND STATE REQUIREMENTS,  
INCLUDING INDUSTRIAL COST RECOVERY OF FEDERAL  
GRANTS.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 796 13/2 5/1  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR-EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 3A. STUDY OF CERTAIN  
INDUSTRIAL WASTES.

(U)

OCT 75 284P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ORIGINAL CONTAINS COLOR PLATES:  
ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE.  
SEE ALSO VOLUME 3B, AD-A036 797.

DESCRIPTORS: \*WASTE MANAGEMENT, \*SANITARY  
ENGINEERING, \*WASTE WATER, SEWAGE TREATMENT,  
WASTES (INDUSTRIAL), DISCHARGE, FLOW RATE,  
URBAN AREAS, WATER POLLUTION ABATEMENT, SEWAGE  
DISPOSAL, MANAGEMENT PLANNING AND CONTROL,  
INDUSTRIAL PLANTS, TABLES (DATA), DATA  
ACQUISITION, MASSACHUSETTS

(U)

IDENTIFIERS: BOSTON HARBOR, WATER CONSUMPTION,  
EASTERN MASSACHUSETTS METROPOLITAN AREA

(U)

THE PURPOSE OF THIS STUDY IS TO COLLECT EXISTING  
INFORMATION AND GENERATE NEW INFORMATION ON THE  
MAGNITUDE AND COMPOSITION OF CERTAIN INDUSTRIAL AND  
MANUFACTURING PROCESS WASTEWATER DISCHARGES IN THE  
EASTERN MASSACHUSETTS METROPOLITAN AREA AND  
TO PROJECT THE MAGNITUDE OF THIS PROBLEM INTO THE  
FUTURE. ADDITIONALLY, THE DATA COLLECTED IS TO BE  
PLACED INTO A COMPUTER ASSISTED RETRIEVAL AND  
PLOTING SYSTEM TO ALLOW IT TO BE USED AS AN  
EFFECTIVE PLANNING TOOL.

(U)

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DDC REPORT BIBLIOGRAPHY    SEARCH CONTROL NO. /ZOM09

AD-A036 797            13/2        5/1  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR-EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 3B. STUDY OF WASTES FROM  
LARGE INDUSTRIES.

(U)

OCT 75    174P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ORIGINAL CONTAINS COLOR PLATES:  
ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE.  
SEE ALSO VOLUME 4, AD-A036 798.

DESCRIPTORS: \*WASTE MANAGEMENT, \*SANITARY  
ENGINEERING, \*WASTE WATER, SEWAGE TREATMENT,  
WASTES(INDUSTRIAL), INDUSTRIAL PLANTS, FLOW  
RATE, DISCHARGE, URBAN AREAS, WATER POLLUTION  
ABATEMENT, SEWAGE DISPOSAL, DATA ACQUISITION,  
TABLES(DATA), MASSACHUSETTS  
IDENTIFIERS: BOSTON HARBOR, WATER CONSUMPTION,  
EASTERN MASSACHUSETTS METROPOLITAN AREA

(U)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 798 13/2 5/1  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 4. WATER ORIENTED WASTEWATER  
DISPOSAL CONCEPTS.

(U)

OCT 75 61P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 5, AD-A036  
799.

DESCRIPTORS: \*WASTE MANAGEMENT, \*SANITARY  
ENGINEERING, \*WASTE WATER, SEWAGE DISPOSAL, WATER  
RESOURCES, DRAINAGE, RIVERS, INLAND WATERWAYS,  
URBAN AREAS, SEWAGE TREATMENT, POLLUTANTS, FLOW  
RATE, WATER POLLUTION ABATEMENT, MASSACHUSETTS,  
GEOGRAPHICAL DISTRIBUTION, BASINS(GEOGRAPHIC)

(U)

IDENTIFIERS: BOSTON HARBOR, WATER CONSUMPTION,  
PUMPING STATIONS, DEER ISLAND TREATMENT PLANT,  
NUT ISLAND TREATMENT PLANT, EASTERN  
MASSACHUSETTS METROPOLITAN AREA

(U)

THIS REPORT, PRESENTS FOUR WATER ORIENTED SERVICE  
SYSTEM CONCEPTS WITH TECHNICAL DATA. THIS  
REPORT IS ARRANGED IN THE FOLLOWING FORMAT. THE  
INTRODUCTION IS PRESENTED TO GIVE A BRIEF DESCRIPTION  
OF THE STUDY AREA. THIS IS FOLLOWED BY A DETAILED  
DISCUSSION OF THE FOUR CONCEPTUAL ENGINEERING PLANS.  
THE FIRST SECTIONS OF THE CHAPTERS RELATING TO THE  
CONCEPTS PRESENT AN OVERVIEW OF THE PLANS NOTING  
ADVANTAGES AND DISADVANTAGES. THIS IS FOLLOWED BY A  
DISCUSSION OF THOSE FACILITIES THAT ARE LOCATED  
WITHIN THE SERVICE AREA OF THE DEER ISLAND AND  
NUT ISLAND SEWAGE TREATMENT PLANTS, AND THE  
REGIONAL AND MUNICIPAL TREATMENT SYSTEMS THAT ARE  
LOCATED OUTSIDE OF THIS SERVICE AREA.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 799 13/2 5/1  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 5. LAND ORIENTED WASTEWATER  
UTILIZATION CONCEPT.

(U)

OCT 75 201P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ORIGINAL CONTAINS COLOR PLATES:  
ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE. SEE  
ALSO VOLUME 6, AD-A036 800.

DESCRIPTORS: \*WASTE MANAGEMENT, \*SANITARY  
ENGINEERING, \*WASTE WATER, SEWAGE DISPOSAL, LAND  
USE, POLLUTANTS, INDUSTRIAL PLANTS,  
WASTES(INDUSTRIAL), SEWAGE TREATMENT, LAND  
AREAS, URBAN AREAS, FLOW RATE, MASSACHUSETTS,  
WATER POLLUTION ABATEMENT, GEOGRAPHICAL  
DISTRIBUTION, GEOLOGIC FORMATION,  
BASINS(GEOGRAPHIC)

(U)

IDENTIFIERS: BOSTON HARBOR, WATER CONSUMPTION,  
PUMPING STATIONS, DEER ISLAND TREATMENT PLANT,  
NUT ISLAND TREATMENT PLANT, EASTERN  
MASSACHUSETTS METROPOLITAN AREA

(U)

THE PURPOSE OF THIS ELEMENT OF THE BOSTON  
HARBOR-EASTERN MASSACHUSETTS METROPOLITAN  
AREA WASTEWATER MANAGEMENT STUDY IS TO  
EXPLORE VARIOUS POSSIBILITIES OF UTILIZING LAND  
APPLICATION METHODS TO PROVIDE ADDITIONAL TREATMENT  
OF EFFLUENTS FROM SECONDARY TREATMENT PLANTS. THIS  
IS IN KEEPING WITH THE FEDERAL WATER POLLUTION  
CONTROL ACT AMENDMENTS OF 1972 AND THE EXPRESSED  
DESIRES OF THE STUDY PARTICIPANTS TO DETERMINE THE  
BEST SOLUTION FOR MANAGING WASTEWATER IN THE  
EASTERN MASSACHUSETTS METROPOLITAN AREA.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 800 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 6. FORMULATION OF THE WASTEWATER  
UTILIZATION PLAN.

(U)

OCT 75 67P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 7, AD-A036  
840.

DESCRIPTORS: \*SANITARY ENGINEERING, \*SEWAGE  
TREATMENT, \*WASTE TREATMENT, \*WASTE WATER,  
UTILIZATION, FACILITIES, WATER QUALITY,  
PLANNING, METHODOLOGY, WATER POLLUTION ABATEMENT,  
COST ANALYSIS, COMPARISON, MASSACHUSETTS, URBAN  
AREAS  
IDENTIFIERS: BOSTON HARBOR

(U)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 801 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 8. URBAN STORMWATER MANAGEMENT.

(U)

OCT 75 221P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 8A, AD-A036  
802.

DESCRIPTORS: \*SANITARY ENGINEERING, \*SEWAGE  
TREATMENT, \*WASTE MANAGEMENT, \*RUNOFF, \*WATER  
TREATMENT, WASTE WATER, DRAINAGE, OVERLOAD,  
FACILITIES, COST EFFECTIVENESS, COST ANALYSIS,  
WATER POLLUTION ABATEMENT, CLIMATE, LAND USE,  
MASSACHUSETTS, URBAN AREAS

(U)

IDENTIFIERS: BOSTON HARBOR

(U)

THE PURPOSE OF THE URBAN STORMWATER MANAGEMENT  
STUDY REPORTED HEREIN IS TO PRESCRIBE COST-EFFECTIVE  
TREATMENT MEASURES FOR THE RIVER BASINS AND DRAINAGE  
AREAS IN THE EASTERN MASSACHUSETTS METROPOLITAN  
AREA. THE STUDY CONSIDERS TREATMENT ALTERNATES OF  
URBAN STORMWATER RUNOFF AND OFFERS COST-EFFECTIVE  
METHODS FOR EACH TOWN WITHIN THE RIVER BASIN OR  
DRAINAGE AREA FOR TREATING ITS RUNOFF. WHEREVER  
POSSIBLE, THE PROPOSED METHODS OF URBAN STORMWATER  
MANAGEMENT ARE PLACED IN PERSPECTIVE WITH RESPECT TO  
EXISTING STORM DRAINAGE FACILITIES, FUTURE URBAN  
GROWTH, AND THE RECEIVING WATER BODY.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 802 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 8A. APPENDIX TO URBAN  
STORMWATER MANAGEMENT.

(U)

OCT 75 257P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 9, AD-A036  
803.

DESCRIPTORS: \*SANITARY ENGINEERING, \*SEWAGE  
TREATMENT, \*WASTE MANAGEMENT, \*RUNOFF, \*WATER  
TREATMENT, WASTE WATER, POLLUTANTS, DRAINAGE,  
INFORMATION, WATER POLLUTION ABATEMENT,  
FACILITIES, RIVERS, BASINS(GEOGRAPHIC),  
MASSACHUSETTS, URBAN AREAS  
IDENTIFIERS: BOSTON HARBOR

(U)

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CONTENTS: THE STORMWATER MANAGEMENT  
SUMMARY; URBAN DRAINAGE AREA; TOTAL STORM  
RUNOFF VOLUME; TOTAL STORMWATER POLLUTANTS;  
AND STORMWATER TREATMENT.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 803 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 9. MDC INTERCEPTOR AND PUMPING  
STATIONS ANALYSIS AND IMPROVEMENTS.

(U)

OCT 75 229P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ORIGINAL CONTAINS COLOR PLATES:  
ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE.  
INCLUDES 4 ENVELOPES WITH MAPS. SEE ALSO VOLUME 10,  
AD-A036 804.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*SEWAGE DISPOSAL, \*WATER  
POLLUTION ABATEMENT, PUMPING, FACILITIES, WATER  
POLLUTION, WATER QUALITY, URBAN AREAS, SEWAGE,  
SEWAGE TREATMENT, COSTS, MASSACHUSETTS, CIVIL  
ENGINEERING, MODELS, COMPUTERIZED SIMULATION

(U)

IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, EASTERN MASSACHUSETTS METROPOLITAN  
AREA, EMMA STUDY

(U)

THE PURPOSE OF THIS TECHNICAL DATA VOLUME IS TO  
PRESENT THE INVENTORY AND EVALUATION OF THE MDC  
INTERCEPTORS, PUMPING STATIONS AND HEADWORKS IN TERMS  
OF THEIR ADEQUACY TO MEET PROJECTED NEEDS UNDER  
VARIOUS CONCEPTS AND THE RECOMMENDED PLAN, AND TO  
RECOMMEND THE GENERAL UPGRADING REQUIRED AT THE  
PUMPING STATIONS AND HEADWORKS.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 804 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 10. DEER ISLAND WASTEWATER  
TREATMENT PLANT ANALYSIS AND IMPROVEMENTS.

(U)

OCT 75 82P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 11, AD-A036  
805.

DESCRIPTORS: \*SANITARY ENGINEERING, \*SEWAGE  
TREATMENT, \*WASTE MANAGEMENT, FACILITIES, WASTE  
WATER, WATER TREATMENT, COST ANALYSIS,  
MODIFICATION, PUBLIC UTILITIES, EXPERIMENTAL  
DESIGN, EFFLUENTS, PUMPING, AERATION, WATER  
POLLUTION ABATEMENT, SEWAGE DISPOSAL, URBAN AREAS,  
MASSACHUSETTS

(U)

IDENTIFIERS: BOSTON HARBOR

(U)

THIS REPORT COVERS THE BASIC DESIGN CRITERIA FOR  
UPGRADING THE EXISTING PRIMARY PLANT AND PROVIDING  
THOSE FACILITIES THAT WOULD BE REQUIRED TO ACCOMPLISH  
SECONDARY TREATMENT INCLUDING FLOWS AND COSTS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 805 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 11. NUT ISLAND WASTEWATER  
TREATMENT PLANT ANALYSIS AND IMPROVEMENTS.

(U)

OCT 75 63P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 12, PART 1, AD-  
A036 806.

DESCRIPTORS: \*SANITARY ENGINEERING, \*SEWAGE  
TREATMENT, \*WASTE MANAGEMENT, FACILITIES, WASTE  
WATER, WATER TREATMENT, COST ANALYSIS,  
MODIFICATION, PUBLIC UTILITIES, EXPERIMENTAL  
DESIGN, EFFLUENTS, PUMPING, AERATION, WATER  
POLLUTION ABATEMENT, SEWAGE DISPOSAL, URBAN AREAS,  
MASSACHUSETTS

(U)

IDENTIFIERS: BOSTON HARBOR

(U)

THIS REPORT COVERS THE STUDY PERFORMED TO ANALYZE  
THE NECESSARY IMPROVEMENTS TO THE PRIMARY TREATMENT  
FACILITIES AT THE NUT ISLAND WASTEWATER  
TREATMENT PLANT, TOGETHER WITH THE WORK NECESSARY  
TO PROVIDE SECONDARY TREATMENT CAPABILITIES AT THE  
FACILITY.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 806 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 12. FINANCING AND  
MANAGEMENT.

(U)

OCT 75 208P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH PEAT,  
MARWICK, MITCHELL AND CO., BOSTON, MASS. SEE  
ALSO VOLUME 12, PART 2, AD-A036 807.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*WATER TREATMENT, \*WATER  
POLLUTION, URBAN AREAS, OPERATIONS RESEARCH,  
PLANNING, FINANCE, COSTS, SEWAGE DISPOSAL,  
SEWAGE TREATMENT, WASTES(INDUSTRIAL), WATER  
POLLUTION, WATER QUALITY, WATER TREATMENT,  
MASSACHUSETTS, UNITED STATES GOVERNMENT,  
ENVIRONMENTAL PROTECTION

(U)

IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, EASTERN MASSACHUSETTS METROPOLITAN  
AREA, ENVIRONMENTAL PROTECTION AGENCY, EMMA  
STUDY

(U)

THIS VOLUME CONTAINS THE FINDINGS OF THE MANAGEMENT  
PHASE OF THE EMMA STUDY AND IS PRESENTED IN TWO  
PARTS (PART 1 AND PART 2). THE OBJECTIVES OF  
THE MANAGEMENT PHASE WERE TO EVALUATE AND RECOMMEND  
MODIFICATION TO THE ORGANIZATIONAL ENTITY AND  
FINANCIAL MECHANISMS REQUIRED TO MANAGE, ADMINISTER,  
CONTROL, FUND AND OPERATE THE RECOMMENDED SYSTEM. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 807 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 12. PART 2. FINANCING AND  
MANAGEMENT.

(U)

OCT 75 305P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 13, AD-A036 808.  
PREPARED IN COOPERATION WITH PEAT, MARWICK, MITCHELL  
AND CO., BOSTON, MASS.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*WATER TREATMENT, \*WATER  
POLLUTION ABATEMENT, URBAN AREAS, OPERATIONS  
RESEARCH, PLANNING, FINANCE, COSTS, COST  
ANALYSIS, SEWAGE DISPOSAL, SEWAGE TREATMENT,  
WASTES(INDUSTRIAL), WATER POLLUTION, WATER  
QUALITY, MASSACHUSETTS

(U)

IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, EASTERN MASSACHUSETTS METROPOLITAN  
AREA, ENVIRONMENTAL PROTECTION AGENCY, EMMA  
STUDY

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 808 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 13. IMPACT ANALYSIS AND  
EVALUATION.

(U)

OCT 75 144P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 13A, AD-A036  
809.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*WATER TREATMENT,  
\*ENVIRONMENTAL IMPACT STATEMENTS, \*WATER POLLUTION  
ABATEMENT, URBAN AREAS, OPERATIONS RESEARCH,  
PLANNING, FINANCE, COSTS, SEWAGE DISPOSAL,  
SEWAGE TREATMENT, WASTES(INDUSTRIAL), WATER  
POLLUTION, WATER QUALITY, RECYCLED MATERIALS,  
MASSACHUSETTS

(U)

IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, EASTERN MASSACHUSETTS METROPOLITAN  
AREA, ENVIRONMENTAL PROTECTION AGENCY, CORPS OF  
ENGINEERS, EMMA STUDY

(U)

THIS VOLUME DOCUMENTS THE NEW ENGLAND  
DIVISION OF THE CORPS OF ENGINEERS IMPACT  
ASSESSMENT EFFORT AS A PART OF THE DEVELOPMENT OF  
ALTERNATIVES FOR THE BH-EMMA STUDY AREA. IT  
SHOWS HOW THE STUDY'S TECHNICAL SUBCOMMITTEE,  
CONSISTING OF REPRESENTATIVES OF THE MASSACHUSETTS  
DIVISION OF WATER POLLUTION CONTROL,  
METROPOLITAN DISTRICT COMMISSION, OFFICE OF  
STATE PLANNING, DEPARTMENT OF PUBLIC  
HEALTH, METROPOLITAN AREA PLANNING COUNCIL,  
CORPS OF ENGINEERS, ENVIRONMENTAL PROTECTION  
AGENCY AND A CITIZENS COMMITTEE, CONSIDERED  
BOTH BENEFICIAL AND ADVERSE AESTHETIC, BIOLOGICAL,  
HYGIENIC AND SOCIO-ECONOMIC IMPACTS THAT WOULD RESULT  
FROM THE VARIOUS PROPOSED ALTERNATIVES FOR WASTE  
WATER MANAGEMENT WITHIN THE BH-EMMA STUDY  
AREA.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 809 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 13A. BIOLOGICAL IMPACT  
ANALYSIS.

(U)

OCT 75 145P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 13B, AD-A036  
810.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*WATER TREATMENT,  
\*ENVIRONMENTAL IMPACT STATEMENTS, \*WATER POLLUTION  
ABATEMENT, URBAN AREAS, PLANNING, COSTS,  
BIOLOGY, BIOCHEMISTRY, ECOLOGY, CHEMISTRY,  
HYDROLOGY, SEWAGE DISPOSAL, SEWAGE TREATMENT,  
WASTES(INDUSTRIAL), MASSACHUSETTS

(U)

IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, EASTERN MASSACHUSETTS METROPOLITAN  
AREA, ENVIRONMENTAL PROTECTION AGENCY, CORPS OF  
ENGINEERS, EMMA STUDY

(U)

THE WATERWAYS OF THE EASTERN MASSACHUSETTS  
METROPOLITAN AREA CONSIST OF BOSTON HARBOR, A  
LARGE (47 SQUARE MILES) RELATIVELY SHALLOW  
COMPLEX OF BAYS AND TIDAL ESTUARIES, WITH 180 MILES  
OF TIDAL SHORELINE; PLUS THREE RIVERS OF SUBSTANTIAL  
LENGTH: THE CHARLES RIVER (LENGTH, 80  
MILES), NEPONSET RIVER (LENGTH, 30 MILES)  
AND MYSTIC RIVER (LENGTH, 17 MILES INCLUDING  
ITS MAJOR TRIBUTARY, THE ABERJONA RIVER).  
OUTLYING REGIONS ALONG THE COAST INCLUDE: RIVER  
AND TIDAL ESTUARINE SYSTEMS OF THE IPSWICH, PINES  
AND SAUGUS RIVERS; GLOUCESTER, BEVERLY AND  
SALEM HARBORS ON THE NORTH SHORE; AND THE  
JONES, NORTH AND SOUTH RIVERS AND GULF,  
COHASSET AND SCITUATE HARBORS ON THE SOUTH  
SHORE. THE REGION HAS BEEN SUBJECTED TO EVER  
INCREASING AMOUNTS OF MUNICIPAL WASTES AND OTHER  
ABUSES. CORRECTIVE AND REMEDIAL MEASURES HAVE BEEN  
PROPOSED. A REAL NEED EXISTS FOR RAPID AND  
EFFICIENT EVALUATION OF THE IMPACT OF SUCH PROPOSED  
SOLUTIONS SO THAT THE ENVIRONMENTAL CONSEQUENCES MAY  
BE WEIGHED AGAINST ECONOMIC COSTS.

305

(U)

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/ZOM09

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDM09

AD-A036 810 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 13B. SOCIO-ECONOMIC IMPACT  
ANALYSIS.

(U)

OCT 75 214P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 13C, AD-A036  
811.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*ENVIRONMENTAL IMPACT  
STATEMENTS, \*WATER TREATMENT, URBAN AREAS, \*WATER  
POLLUTION ABATEMENT, URBAN AREAS, PLANNING,  
ECONOMICS, POPULATION, LAND USE,  
HOUSING(DWELLINGS), INDUSTRIES, RECREATION,  
AGRICULTURE, FORESTRY, FINANCE, MASSACHUSETTS  
IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, EASTERN MASSACHUSETTS METROPOLITAN  
AREA, EMMA STUDY

(U)

(U)

THIS REPORT IS THE FINAL VERSION OF THE SOCIO-  
ECONOMIC IMPACT ASSESSMENT COMPONENT OF THE BOSTON  
HARBOR - EASTERN MASSACHUSETTS METROPOLITAN  
AREA (EMMA) WASTEWATER MANAGEMENT STUDY.  
THE MAIN BODY OF THE REPORT IS ORGANIZED INTO NINE  
SUBSTANTIVE CHAPTERS, CORRESPONDING TO SPECIFIC  
REQUIREMENTS CONTAINED IN THE CONTRACT SCOPE OF  
WORK: SOCIO-ECONOMIC CONDITIONS; CURRENT  
AND PROJECTED; LAND USE; HOUSING;  
INDUSTRIAL ACTIVITY; RECREATIONAL  
OPPORTUNITY; COMMERCIAL ACTIVITY;  
AGRICULTURE AND FORESTRY; MUNICIPAL FINANCE;  
EMPLOYMENT AND INCOME. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 811 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 13C. HYGIENIC IMPACT  
ANALYSIS.

(U)

OCT 75 166P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 13D, AD-A036  
812.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*ENVIRONMENTAL IMPACT  
STATEMENTS, \*WATER POLLUTION ABATEMENT, WATER  
TREATMENT, URBAN AREAS, PUBLIC HEALTH, WATER  
POLLUTION, WATER QUALITY, SEWAGE, SEWAGE  
TREATMENT, MASSACHUSETTS, RIVERS, WATERSHEDS,  
HARBORS

(U)

IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, EASTERN MASSACHUSETTS METROPOLITAN  
AREA, EMMA STUDY

(U)

THE BH-EMMA STUDY AREA, ENCOMPASSING 109  
COMMUNITIES WITHIN A 30 MILE RADIUS OF THE CITY OF  
BOSTON CONTAINS 1760 SQUARE MILES OF LAND, AND A  
POPULATION OF OVER 3 MILLION. FORTY THREE OF THESE  
COMMUNITIES ARE CURRENTLY MEMBERS OF THE MDC  
METROPOLITAN SEWERAGE DISTRICT. A LARGE  
PORTION OF THESE 109 COMMUNITIES LIE WITHIN THE  
FOLLOWING REGIONS: BOSTON HARBOR, MYSTIC  
RIVER WATERSHED, NEPONSET RIVER WATERSHED,  
CHARLES RIVER WATERSHED, IPSWICH RIVER-  
NORTH COASTAL, NORTH RIVER-SOUTH COASTAL,  
SUDBURY, ASSABET AND CONCORD WATERSHEDS.  
THE INTENT OF THIS REPORT IS TO DETERMINE THE  
POTENTIAL BENEFICIAL, NEUTRAL AND ADVERSE IMPACTS  
WHICH THE IMPLEMENTATION OF EACH ALTERNATIVE CONCEPT  
FOR WASTEWATER MANAGEMENT MAY HAVE ON THE PUBLIC  
HEALTH OF THE STUDY AREA.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 812 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 13D. VISUAL, CULTURAL AND  
DESIGN IMPACT ANALYSIS.

(U)

OCT 75 275P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME/ 14, AD-A036  
813.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*ENVIRONMENTAL IMPACT  
STATEMENTS, \*WATER POLLUTION ABATEMENT, URBAN AREAS,  
WATER POLLUTION, WATER QUALITY, SEWAGE, SEWAGE  
TREATMENT, MASSACHUSETTS, RIVERS, HARBORS,  
ENVIRONMENTS

(U)

IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, EASTERN MASSACHUSETTS METROPOLITAN  
AREA, EMMA STUDY

(U)

THE INTENT OF THIS REPORT IS TO IDENTIFY AND ASSESS  
THE POTENTIAL VISUAL-CULTURAL AND DESIGN IMPACTS  
RESULTING FROM THE IMPLEMENTATION OF ANY OF FIVE  
REGIONAL CONCEPTS FOR WASTEWATER TREATMENT WITHIN THE  
BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA (BH-EMMA). IN REALITY,  
THIS STUDY WILL PROBABLY RAISE MORE ISSUES AND  
QUESTIONS THAN IT WILL ADDRESS AND ATTEMPT TO ANSWER.  
ON ITS OWN, ITS VALUE IN DETERMINING EITHER THE  
NEED AND/OR DESIRABILITY OF A REGIONAL APPROACH TO  
WASTEWATER MANAGEMENT, OR THE SELECTION OF ONE  
CONCEPT OVER ANOTHER, IS MINIMUM. THE FULL VALUE OF  
THIS STUDY CANNOT BE REALIZED UNTIL IT IS USED IN  
COMBINATION WITH OTHER ASSESSMENTS AS PART OF AN  
OVERALL SCREENING AND REVIEW PROCESS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 813 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 14. PUBLIC INVOLVEMENT.

(U)

OCT 75 181P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 15, AD-A036  
814.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*ENVIRONMENTAL IMPACT  
STATEMENTS, \*WATER POLLUTION ABATEMENT, WATER  
TREATMENT, URBAN AREAS, PUBLIC RELATIONS, WATER  
POLLUTION, WATER QUALITY, SEWAGE, SEWAGE  
TREATMENT, PUBLIC OPINION, MASSACHUSETTS  
IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, EASTER MASSACHUSETTS METROPOLITAN  
AREA, EMMA STUDY

(U)

(U)

THIS IS A REPORT ABOUT OPEN PLANNING IN THE  
BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA WASTEWATER MANAGEMENT  
STUDY. IT SHOWS HOW THE COMMONWEALTH OF  
MASSACHUSETTS, ENVIRONMENTAL PROTECTION  
AGENCY, CORPS OF ENGINEERS, METROPOLITAN  
AREA PLANNING COUNCIL, AND A CITIZENS'  
COMMITTEE HAVE WORKED TOGETHER IN A WASTEWATER  
MANAGEMENT STUDY. IT SHOWS HOW THEY HAVE ENCOURAGED  
PUBLIC RESPONSE TO PLANNING DATA AND ASSUMPTIONS AS  
WELL AS FIVE DIFFERENT CONCEPTS FOR WASTEWATER  
MANAGEMENT.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A036 840 13/2  
METCALF AND EDDY INC BOSTON MASS

WASTEWATER ENGINEERING AND MANAGEMENT PLAN  
FOR BOSTON HARBOR - EASTERN MASSACHUSETTS  
METROPOLITAN AREA EMMA STUDY. TECHNICAL  
DATA VOLUME 7. COMBINED SEWER OVERFLOW  
REGULATION.

(U)

NOV 75 155P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 8, AD-A036  
801.

DESCRIPTORS: \*WASTE MANAGEMENT, \*WASTE WATER,  
\*SANITARY ENGINEERING, \*WATER POLLUTION ABATEMENT,  
URBAN AREAS, WATER POLLUTION, WATER QUALITY,  
SEWAGE, SEWAGE TREATMENT, STORMS, WATER,  
RUNOFF, DRAINAGE, RAINFALL, MASSACHUSETTS,  
MATHEMATICAL MODELS, COMPUTERIZED SIMULATION,  
COSTS

(U)

IDENTIFIERS: BOSTON(MASSACHUSETTS), BOSTON  
HARBOR, BOSTON MASSACHUSETTS METROPOLITAN  
AREA, EMMA STUDY, OVERFLOWS

(U)

IT IS THE PURPOSE OF THIS TECHNICAL DATA VOLUME TO  
PRESENT AN EVALUATION OF THE COMBINED SEWER OVERFLOW  
PROBLEM IN THE BOSTON HARBOR AREA IN TERMS OF  
QUANTIFYING THE PROBLEM AND IDENTIFYING THE DIRECTION  
THAT TECHNICAL, ENVIRONMENTAL AND ECONOMIC ANALYSES  
SHOULD TAKE DURING DETAILED FACILITIES PLANNING.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A038 408 13/2 6/5  
ARMY MEDICAL INTELLIGENCE AND INFORMATION AGENCY  
WASHINGTON D C

EFFECT OF OZONE AND CHLORINE ON 3,4-  
BENZOPYRENE DURING THE DISINFECTION OF WATER  
(DEYSTVIYE OZONA I KHLORA NA 3,4-BENZPIREN  
PRI OREZZARAZHIVANII VODY),

(U)

74 5P GABOVICH, R. D. IKURINYY,  
I. L. IFEDORENKO, Z. P. ;  
REPT. NO. USAMIIA-K-4566

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF GIG. NASELENNYKH MEST  
(USSR) N8 P88-91 1969.

DESCRIPTORS: \*WATER POLLUTION, \*CARCINOGENS,  
\*WASTES (INDUSTRIAL), \*WATER TREATMENT, OZONE,  
CHLORINE, EFFLUENTS, COAL, SHALE, OIL  
PRODUCTS, PETROLEUM PRODUCTS, REFINERIES, OPEN  
WATER, RATS, CANCER, TRANSLATIONS, USSR  
IDENTIFIERS: \*3-4-BENZOPYRENE

(U)

(U)

Z.P. FEDORENKO'S EXPERIMENTS SHOWED THAT THE  
TARRY SUBSTANCES ISOLATED FROM SEWAGE POSSESS  
CARCINOGENIC ACTIVITY WHEN APPLIED TO THE SKIN AND  
THAT PERORAL ADMINISTRATION TO WHITE RATS OF WATER  
CONTAINING VARIOUS CONCENTRATIONS OF 3-4-BENZOPYRENE  
INDUCES MALIGNANT AND BENIGN TUMORS OF THE  
FORESTOMACH. THE FREQUENCY OF TUMOR DEVELOPMENT WAS  
FOUND TO BE DIRECTLY RELATED TO THE AMOUNT OF THE  
SUBSTANCE ADMINISTERED. IN THE LIGHT OF THE  
FOREGOING, IT SEEMED WORTHWHILE TO TRACE THE FATE OF  
3-4-BENZOPYRENE DISSOLVED IN WATER AND SUBJECTED TO  
DIFFERENT KINDS OF TREATMENT IN DRINKING WATER SUPPLY  
SYSTEMS. THE SUBJECT IS INADEQUATELY DISCUSSED IN  
THE LITERATURE. THERE ARE ONLY A FEW REPORTS ON THE  
EFFECT OF CHLORINATION OF WATER ON 3-4-BENZOPYRENE  
DISSOLVED IN IT. BECAUSE OF THE LIMITED INFORMATION  
ON THE SUBJECT, WE DECIDED TO COMPARE THE EFFECT OF  
CHLORINE TO THAT OF THE MOST INTENSIVE OXIDIZING  
AGENT, OZONE, ON 3-4-BENZOPYRENE DISSOLVED IN WATER.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM09

AD-A038 594 13/2  
CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILL

A SYSTEMS APPROACH TO CONSTRUCTION OF  
RECREATIONAL AREA FACILITIES VOLUME II.  
REQUEST FOR TECHNICAL PROPOSAL AND EVALUATION  
DOCUMENTATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAR 77 117P WORREL, EDWARD J. ;  
REPT. NO. CERL-TR-D-76-VOL-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*TOILET FACILITIES, \*SANITARY  
ENGINEERING, \*SHOWER FACILITIES, CONSTRUCTION,  
SPECIFICATIONS, PROPOSALS, SYSTEMS APPROACH,  
DOCUMENTATION

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IDENTIFIERS: RECREATIONAL FACILITIES

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THIS IS THE SECOND VOLUME OF A TWO-VOLUME REPORT  
DESCRIBING A PROGRAM CONDUCTED BY THE U.S. ARMY  
CONSTRUCTION ENGINEERING RESEARCH LABORATORY  
IN CONJUNCTION WITH THE U.S. ARMY ENGINEER  
DIVISION, OHIO RIVER, FOR THE PROCUREMENT OF 78  
INDUSTRIALIZED SANITARY FACILITIES. THIS VOLUME  
CONTAINS THE REQUEST FOR TECHNICAL PROPOSAL  
STEP-ONE DOCUMENTATION (WHICH INCLUDES THE  
PERFORMANCE SPECIFICATION FOR SANITARY  
FACILITIES), AND THE EVALUATION DOCUMENTATION  
USED BY THE EVALUATION BOARD TO EVALUATE THE  
SUBMITTED PROPOSALS, AND STEP-TWO DOCUMENTATION  
(EXCLUDING WAGE RATES PER COUNTY FOR POTENTIAL  
LABORERS INVOLVED IN THE PROGRAM).

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AD-A039 039 11/6 13/12 13/2  
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C  
TRANSLATION DIV

SAFETY ORDERS AND INDUSTRIAL SANITATION  
DURING MECHANICAL TREATMENT AND USE OF  
ALUMINUM AND TITANIUM ALLOYS (PRAVILA  
TEKNIKI BEZOPASNOSTI I PROIZVODSTVENNOY  
SANITARI I PRI OBRABOTKE I PRIMENENII  
ALYUMIN•YEVYKH I TITANOVYKH SPLAVOV),

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FEB 77 37P SHARIKOV, L. P. ;  
REPT. NO. NISC-TRANS-3913

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SUPPLEMENTARY NOTE: TRANS. OF SPRAVOCHNIK PO OKHRANE  
TRUDA. NORMY I PRAVILA PO METALLO-I  
DEREVOOBRABOTKE (USSR) V3 P172-181 AND P238-260 1973.

DESCRIPTORS: \*ALUMINUM ALLOYS, \*TITANIUM ALLOYS,  
\*METALWORKING, \*SAFETY, \*SANITARY ENGINEERING,  
REGULATIONS, GOVERNMENT(FOREIGN), MACHINE SHOP  
PRACTICE, CLEANING COMPOUNDS, WELDING, CUTTING,  
WASTE MANAGEMENT, FIRE EXTINGUISHERS, PROTECTIVE  
EQUIPMENT, VENTILATION, TRANSLATIONS, USSR

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METAL WORKING MACHINES AND EQUIPMENT, THEIR  
ARRANGEMENT AND LOCATION SHALL COMPLY WITH THE  
SAFETY ORDERS AND INDUSTRIAL SANITATION FOR  
COLD WORKING OF METALS IN MACHINE-BUILDING  
INDUSTRY AND WITH THESE ORDERS. INDUSTRIAL  
INSTRUCTIONS FOR CUTTING ALLOYS SHALL INCLUDE ALL  
REQUIREMENTS FOR SAFETY OPERATION OF THE MACHINERY.  
WATER-BASED EMULSIONS CONTAINING MINERAL AND PLANT  
OILS, AS WELL AS THEIR MIXTURES SHALL BE USED AS  
COOLING AGENTS DURING CUTTING OF ALLOYS. COOLING  
EMULSIONS CONTAINING 80% OF SULFOFREZOL, UP TO  
15% OF KEROSENE AND UP TO 5% OF OLEIC ACID SHALL  
BE USED FOR COOLING PURPOSES DURING DRILLING AND DEEP  
BORING OF METAL PARTS. THE GEOMETRY OF CUTTERS,  
TURNING CONDITIONS AND COOLING OF METAL BARS SHALL  
SECURE A PROPER HEAT DISSIPATION FROM THE CUTTING  
ZONE. THE TEMPERATURE OF SHIPS SHALL NOT EXCEED  
150-200 C. TO ELIMINATE IGNITION OF CHIPS, METAL  
BARS SHALL BE FED WITH A SPEED NOT EXCEEDING 0.06 MM  
PER REVOLUTION, OR WITH THE CUTTING RATE OF NOT MORE  
THAN 100 M/MIN. A LOCAL EXHAUST SHALL BE INSTALLED  
FOR THE REMOVAL OF DUST, SMALL METAL SHIPS AND  
FILINGS.

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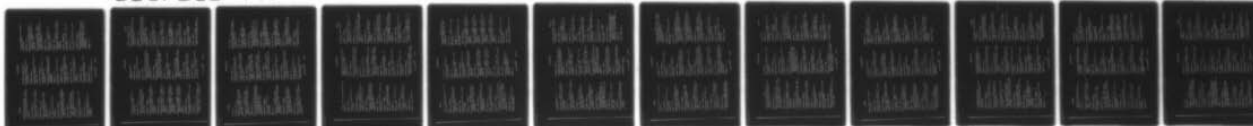
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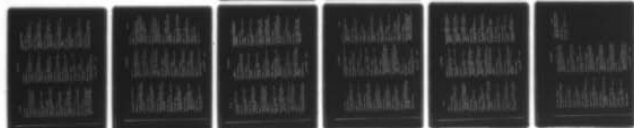
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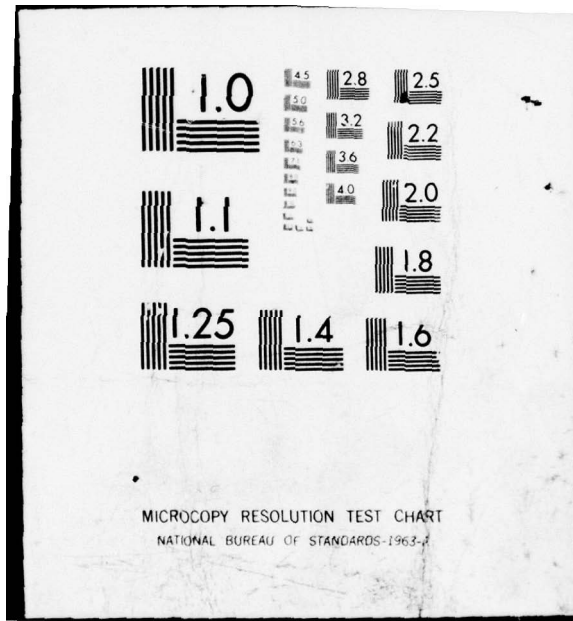


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